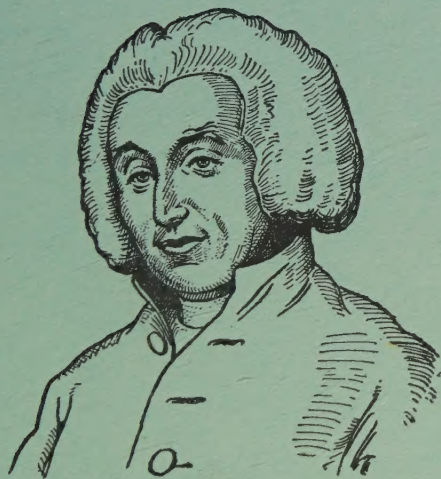


THE
CRACHERODE
SHELL COLLECTION

GUY L. WILKINS



Clayton Mordaunt Cracherode

BULLETIN OF
THE BRITISH MUSEUM (NATURAL HISTORY)
HISTORICAL SERIES

Vol. I No. 4

LONDON : 1957

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BY
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Pp. 121-184; *Pls.* 20-25

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THE BULLETIN OF THE BRITISH MUSEUM
(NATURAL HISTORY), *instituted in 1949, is
issued in five series corresponding to the Departments
of the Museum, and an Historical series.*

*Parts appear at irregular intervals as they become
ready. Volumes will contain about three or four
hundred pages, and will not necessarily be completed
within one calendar year.*

This paper is Vol. I, No. 4 of the Historical series.

PRINTED BY ORDER OF THE TRUSTEES OF
THE BRITISH MUSEUM

Issued March 1957

Price ~~Twenty-one~~ ^{Price Revised} Shillings

THE CRACHERODE SHELL COLLECTION

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SYNOPSIS

The following account of the Cracherode shell collection is the last of a trilogy, in which attempts have been made to place upon record some historical data concerning the seventeenth and eighteenth century material still extant in the British Museum (Natural History). The collection was bequeathed to the Museum by the Revd. Clayton Mordaunt Cracherode in 1799, and was apparently the first to be added to the mollusca collections included in the vast private museum of Sir Hans Sloane (1666-1753), acquired by the Government for the foundation of a National Museum in 1753.

The existence of the Cracherode shells, which formed part of the first exhibited series, was only previously known from the very inadequate account given by Edgar A. Smith in 1906. A recent revaluation of the collection (long since incorporated into the large General collection), together with the existing manuscript catalogues and contemporary literature, has revealed that it is of considerable importance, since it contains a number of types and many figured specimens not previously recorded. This revaluation also clears up the hitherto mistaken identities of the original compilers of the Cracherode manuscript catalogues, and emphasizes the painstaking work of several officers of the British Museum during the formative years at Montague House, Bloomsbury.

No attempt has been made to compile a complete catalogue of the Cracherode collection, but lists have been prepared which include notes on the types and figured specimens. The plates show reproductions of pages from the various manuscript catalogues, and a limited number of the most important Cracherode specimens.

1. ORIGIN AND GROWTH OF THE COLLECTION

NATURAL productions formed only a part of the Cracherodean material bequeathed to the Museum in 1799, for (as will be shown later) Cracherode was mainly a bibliophile and print collector, and according to the dating of his manuscript catalogues a taste for natural history was acquired rather late in his life, from about 1788 onward. Nevertheless he was as particular in the selection of choice specimens of shells as of books and prints, the recorded prices paid for individual specimens being

remarkably high in relation to present-day standards. Money, however, was no great object, for Cracherode had a comfortable and even ample income, and there is no doubt he fully intended to build up a library and collection worthy of our first National Museum, of which he was a most conscientious Trustee.

All that is vouchsafed to us in E. A. Smith's account noted above, under the year 1799, is that "In this year 794 specimens, still marked 'Mus. Cracherode' were bequeathed by the Rev. Clayton Mordaunt Cracherode. A MS. catalogue of this collection is extant, and is of interest, as the specimens are marked with the prices paid for them to the well-known dealer George Humphrey".

The importance of the Cracherode bequest to the Museum, however, should not be under-estimated, for it was the first addition to be made to the Sloane shells. These must have been still in much the same condition as they were left by their former owner when the Museum finally opened to the public in 1759. Admission to view the collections in Montague House was then, and for some years after, a long and tedious business. All but the largest specimens were kept in closed cabinets, and the smaller objects could only be examined by special appointment, and as only two officers could be provided to care for the whole of the natural history collections (Fletcher, 1904, p. 343), it is not surprising that working naturalists still continued to amass large private collections.

It has been shown elsewhere (Wilkins, 1953, p. 4) that Sir Hans Sloane added little or no material to his collections after 1747, and as far as can be ascertained no additional shells came to the Museum after his death until 1799.¹ Thus there was not a single conchological specimen in the National collection from all the new localities visited by Byron, Wallace and Cook in both hemispheres during the intervening years. Cracherode may have realized this, for his collection of shells contained examples of the many novelties brought from New Holland, New South Wales, New Zealand and North America by Cook and his contemporaries.

The paucity of material from these newly-discovered territories was partly due to lack of purchasing power during the Museum's earlier years, returning voyagers finding a more ready and speedy market for their curiosities among the legion of wealthy collectors then resident in the metropolis. Principal among these were the Duchess of Portland, Sir Joseph Banks, Dr. John Fothergill, William and John Hunter, Thomas Martyn and a host of others eager to purchase the strange and beautiful things brought back by the officers and men who accompanied Captain Cook on his three important voyages.

It has been remarked by previous authors, notably Bowdler Sharpe (1906, pp. 162 & 226) that even Sir Joseph Banks, who had so much of this new material at his disposal, allowed many of the natural history specimens to go to others at this time instead of to the British Museum, of which he was a Trustee and otherwise liberal donor. He occupied much the same position in the eyes of the vendors of specimens as did Sir Hans Sloane at the beginning of the century, and that they frequently applied to Banks first is clearly shown in the two following letters quoted by Smith (1911, p. 45):

¹ There is the possibility that some shells came with the collections of the Royal Society, presented to the Museum in 1781, but none have so far been identified.

Daniel Solander to Joseph Banks

"London, August 21, 1775. My dear Sir, Mr. Harlock has sent to your house the plants I mentioned in my last letter. They are collected near Tranquebar by the Brethren of the Moravians, and as good specimens as I have seen . . . Several of the *Resolution's* men have called at your house to offer you their curiosities . . . Captain Cook has sent all his curiosities to my apartments at the Museum. All the shells are to go to Lord Bristol. Four casks have your name on them, and I understand they contain Birds and Fish, etc."

The second letter is couched in humble terms and came from a certain John Marr on board the *Resolution*, also dated 1775 :

"Begging pardon for my Boldness. I take this opportunity for acquainting your Honour of our arrival. After a long and tedious Voyage. Having met with extraordinary good success to the S'd and elsewhere, from many strange Isles I have procured your Honour a few curiosities as good as could be expected from a person of my capacity. Together with a small assortment of shells. Such as was esteem'd by pretended Judges of Shells. We have many experimental men in our ship that pretended to know . . . Depend upon it, Sir, I shall take special care of sending the above mention'd articles. When in order and an opportunity serves".

One suspects that the two formidable Forsters—father and son—who caused so much unpleasantness on Cook's second voyage may have been among the "experimental men" so scathingly referred to by Mr. Marr!

Thus for one reason or another none of the newly-discovered shells appear to have reached the Museum until 1799, after the dispersal of several large collections, each containing a fair proportion of these novelties. All Cracherode's shells were supplied to him by George Humphrey (?1745-1830), who during a long life disposed of many famous collections, the largest being those of Dr. John Fothergill (sold in 1781), the Duchess of Portland (1786), and the Prince of Calonne (1797). For each of these Humphrey prepared elaborate catalogues. He greatly increased his own stock from the last two of these sales, so that Portland and Calonne specimens, which included many from Australia and New Zealand, eventually found their way into the Cracherode collection, their origin being noted in the original manuscript catalogue. Humphrey's large and comprehensive stock enabled him to supply Cracherode with choice specimens at regular intervals, which he continued to do until shortly before the latter's death on 5th April, 1799.

2. GENERAL ACCOUNT AND PRESENT CONDITION OF THE COLLECTION

According to the two finely-written catalogues, the Cracherode collection of minerals, fossils, shells, corals and echinoderms was dealt with by the Museum authorities very shortly after its reception. Although the manuscript catalogues are not signed or dated, the paper used in the first is watermarked 1799 (minerals and fossils) and that in the second 1801 (recent shells, corals and echinoderms). The specimens were all numbered consecutively on the left hand side of the pages, each group commencing with number one, the numbers being written in ink on the corresponding specimens by the same hand. The numbers of fossil animals were

preceded by the letters ZZ and fossil plants by AAA. A small pink disc bearing the full name "Cracherode", "Crach" or "Cr." was at the same time attached to each, a method that seems to have applied to all groups entered in these two catalogues.

At the time of its receipt the collection of shells as listed contained 789 species or varieties (794 including five cirripedes). In most instances only a single good example of each kind was purchased by Cracherode, but occasionally two and sometimes three specimens of variable shells were included in the price charged by Humphrey, and catalogued under the same number. Thus there are approximately ninety-three extra shells to be added to the figure given above, making a grand total of 897 Cracherode shells, which together with the minerals (excluding gems) were valued for remittance of Legacy Tax in 1799 at £2,000 (*Synopsis*, Ed. 2, p. xxiv).

A recent search among the shells comprising the large General collection, with which they were incorporated during the 1820's, reveals that most of the Cracherode shells are still available and in reasonably good condition. All but the largest specimens are mounted on the standard neutral grey tablets, each marked "Mus. Crach" in the right hand bottom corner of the tablet (pl. 25, fig. 15). It is not yet known how Cracherode stored his specimens, but in the early days most of the smaller Museum specimens were kept in closed cabinets, and it was not until the beginning of the nineteenth century, when freer access to the collections became possible, that specimens began to be arranged in glass table cases for inspection by the general public.

The Cracherodean minerals were among the first to be exhibited in this way, together with the clearly written manuscript catalogue (Fletcher, 1094, p. 344), and there is ample evidence that a selection of the Cracherode shells was also exhibited at the same time. This evidence may be found in the second edition of the *Synopsis of the Contents of the British Museum*, issued in 1809, in which is given a general description of the contents of the thirty-eight rooms occupied by the collections in Montague House. Room IX was devoted to "Petrifactions and Shells" (pp. 27-31); sixteen cases round the walls of this room held an assortment of fossil bones, horns, corals and vegetables, with large shells, such as the Giant "Clamp" (*Tridacna*) placed on top of them. The floor space was occupied by five table cases containing various marine productions, table number one being devoted to the Cracherode shells. The summary of the contents of this case is so brief that it may well be quoted in full (pp. 28-30):

(28)

ROOM IX.

CRACHERODEAN COLLECTION OF SHELLS

Nat. Hist. In this table is deposited Mr. Cracherode's valuable collection of shells. Among these some of the most remarkable are the following:

TABLE

I.

Univalves

(Division 1.) A paper nautilus or argonaut shell, remarkable for the lightness of its fabric, and the elegance of its shape. It is inhabited by an animal not unlike a cuttle fish, by extending a pair of membranes adhering to the top of its longest arms, has the power of sailing on the surface of the sea.

Agate and zebra snails : one of these being polished appears as a beautiful rose colour.

(Div. 2.) Cone shells : a very rich assortment : among these are the admirals ; the most remarkable of which are the orange admiral, and the cedo nulli : porcelain shells or cowries ; the argus cowry ; and the orange cowry, the

(29)

latter from New Holland ; sea ears, which are usually of an obscure colour externally, but of a bright pearl-colour internally ; when uncoated and polished the outside appears highly brilliant.

(Div. 3.) Snails properly so called, of various kinds ; one of the most remarkable is the ringent or grinning snail, having the opening divided by tooth-like processes ; the water pot.

(Div. 4.) The carrier trochus, covered with fragments of stone ; the wentle-trap ; mitres ; a music shell ; the great oriental volute, or *Voluta magnifica* ; the imperial volute ; the orange flag volute, &c.

Bivalves

(Div. 5.) The Chinese heart-cockle ; the yellow heart-cockle ; the red anomia, &c.

(Div. 6.) The mother-of-pearl shell, in its young or small state ; the hound's ear oyster ; the cock's-comb oyster ; many beautiful shells of the scallop kind.

(Div. 7.) Several varieties of the red and white thorny oysters ; tellinae, &c.

(30)

ROOM IX.

Multivalves

Nat. Hist. Among the most remarkable of these are the barnacle shells, some of which often adhere to the bottom of ships and to other substances. One of the most elegant species occurs in this collection, forming a group of numerous individuals intermixed with small muscles, and is called the horn of plenty barnacle, or *Lepas cornucopiae*.

TABLE I.

(Div. 8.) Various beautiful specimens of corals, echini, &c. ; a pink pearl ; a Medusa's head, and other star-fish, &c.

It is here to be observed, that the more general and scientific, but less splendid collection of shells belonging to the Museum, is deposited in drawers in the imposts round the room.

It will be noticed from this very brief itinerary that with one exception only vernacular names were as yet used to describe the exhibited specimens. Nevertheless a number of items particularly mentioned can readily be distinguished as those still in existence. Among these are the polished zebra snail, a large artificially-polished *Achatina panthera* (Crach. 83) ; the orange cowry, the well-known and still valuable *Cypraea aurantium* (Crach. 204) ; the sea ears or *Haliotis*, including Leach's type specimens of *H. cracherodii* and *H. rubra* (Crach. 237 & 233), and polished examples of *Haliotis irus* and *naevosa* of which " the outside appears highly brilliant " (Crach. 231 & 232) ; the ringent or grinning snail *Anostoma octodentatum* (Crach. 269) ; the thorny woodcock *Murex scolopax* (Crach. 296) ; the carrier trochus " covered with

fragments of stone" *Xenophora conchyliophora* (Crach. 444) and the great oriental volute *Voluta magnifica* (Crach. 47).

While it is unlikely that the Cracherode specimens were mounted and labelled on tablets at this early period, some of the shells (particularly the bivalves) had the Linnean and Gmelin names written boldly upon them in the hand of the compiler of the Museum catalogue (Pl. 21, fig. 3a, b, c), now known to be Dr. Edward Whitaker Gray (1748-1806). At the time of the second edition of the *Synopsis* (1809) and for a year or two afterwards, no more than fifteen people could be conducted through the rooms of the Museum at one time, and as only a few minutes was allowed in each, individual labelling was scarcely necessary, the summary of each room printed in the *Synopsis* being considered sufficient "for persons who take the usual cursory view of the Museum". But manuscript catalogues similar to those compiled by E. W. Gray for the Cracherode minerals and shells were apparently in preparation for the use of students in all departments (*Synopsis*, ed. 2, p. xxxiv).

The mollusca collections were certainly mounted and labelled and in fairly good order by 1828, for by that time William Wood was able to state in the *Supplement* to his *Index Testaceologicus* published in May, 1828 (Preface, p. iii) that "the majority of the shells have been figured from specimens in the British Museum, and the names attached to them in that collection have been adopted".

That the Museum collections were in good order, and even contained recently-named and as yet unfigured specimens by 1828, indicates that a great deal of work had been done in a comparatively short space of time, and that they had already assumed an entirely different aspect from the days when the Cracherode shells formed the only exhibited series. Attempts had certainly been made to arrange the Cracherode collection according to Lamarck by Dr. Leach, who "cast aside contemptuously the fetters of the Linnean School" (Johnston, 1850, p. 555); but much of the older Museum material "disposed in drawers in the impost round the room", still remained to be sorted. Leach was mainly an entomologist and often became absorbed in "many and various other similar interminable investigations" (Swainson 1840, p. 239), so that he probably did little more than start the rearrangement of the collections before his illness and subsequent retirement in 1822.

The great changes that became evident during the years 1823 to 1828 were due, firstly to the appointment of John George Children (1777-1825) to the Assistant Keepership of the Natural History Department in 1823, and secondly to the appointment of a young man named John Edward Gray (1800-75) as his assistant in the following year. Children became particularly interested in the mollusca, and one of his first tasks was to compile a manuscript catalogue or check-list of the whole of the collection, both recent and fossil, a task nobly carried out in a thick folio volume still preserved in the Department of Zoology. Even this, however, did not include all the earlier Sloane material (which appears to have been finally sorted at a later date) only certain items being selected to complete the exhibited series.

Earlier lists compiled by Solander and later by E. W. Gray were naturally based on the 10th, 12th and 13th (Gmelin) editions of Linné's *Systema Naturae*, for at that time British conchology was entirely Linnean since the war with France precluded free access to continental literature. By the time of Children's appointment

(1823) the last three volumes of the *Histoire Naturelle des Animaux sans Vertébrés* were already available, and this gave the opportunity to start afresh, cataloguing and arranging the Museum collections in accordance with Lamarck's system, which if not absolutely faultless, was considered by Children to be "at least superior to any other general system extant".

The new catalogue or check-list was in effect an exact copy of all the families, genera and species listed by Lamarck in the *Histoire*, entered in precisely the same systematic order, with the tablet numbers of Museum specimens noted in red ink in a special column. The donors' names (Cracherode's most prominent among them) were also entered in red ink in another column. Occasional contributors to the collection included Lamarck himself, Dufresne, Stutchbury, Goodall, Bonelli and several lesser-known contemporary naturalists. At this time, and until 1837, the mollusca collections included fossil as well as recent shells, thus a large number of entries in Children's catalogue refer to fossil species (mostly from Grignon) and these are distinguished by the letter "F" in red ink.

Children's firm attachment to Lamarck's system was emphasized by the publication of his only work on the mollusca, a translation of Lamarck's *Genera of Shells*, which appeared in the *Quarterly Journal of Science* from 1822 to 1824, during his editorship of that journal. Further reference to this will be made later, but as it ran concurrently with the preparation of the Museum catalogue and rearrangement of the exhibited collections, it entailed a thorough search for suitable specimens for illustration and exhibition. Numerous Cracherode shells were used for both purposes, and from Children's pencil notes in the E. W. Gray manuscript catalogue it is evident that he checked practically the whole of the Cracherode collection at this time (c. 1822-24).

No new species appear to have been described as a result of this examination, a deficiency amply rectified by Children's new assistant Mr. J. E. Gray. Even at the age of twenty-four he was no stranger to the mollusca, having already published *A Natural Arrangement of the Mollusca* in the *London Medical Repository* for 1821.¹ This was followed by some descriptions of new species in his own *Zoological Miscellany* commenced in the same year. In 1824, the year of his Museum appointment, he contributed a description of the shells in the *Appendix to Parry's Voyage*, and several articles on mollusca in the first volume of the *Zoological Journal*. These included the now classic monograph on the *Cypræidae*, much of which was based on Museum material and his own considerable private collection.

During the rearrangement and cataloguing of the mollusca collections by Children and Gray, it was soon noticed that there were a number of species not known to Lamarck, and these were published by Gray (but without figures) in the February and June issues of the *Annals of Philosophy* for 1825. Some of the undescribed Cracherode shells were included among Gray's new species, and these were accordingly added to the Museum manuscript catalogue, labelled (many by Children himself), and placed on exhibition, thus enabling Wood to figure them for the first time in

¹ It may not be generally known that Gray's early arrangement published in this rather obscure journal was given in full by Johnston (1850, pp. 560-7), where it is also noted that it was reprinted by Férussac in the French *Bulletin* in 1824.

his *Supplement* of 1828. Children's catalogue was further added to from time to time, often only in pencil in J. E. Gray's unmistakable scrawl, until in 1837 it was finally laid aside in favour of the system of registration in use to-day.

The great change in the arrangement of the mollusca collections at this time can readily be traced from the various editions of the *Synopsis* issued from 1823 onward, that for the year 1827 (ed. 25) being particularly enlightening, for by that time the exhibited collection had grown from the single table in 1809 to no less than 27 cases, all arranged on Lamarckian lines. The descriptions of these cases occupies pages 59-67 of the *Synopsis* of 1827, in which particular attention is directed to the recent change in the nomenclature used on the tablets. However, staunch adherents to Linné had still to be accommodated, and this was accomplished by placing the Lamarckian names on the left of the tablets and the Linnean on the right. No tablets labelled in this way are now extant.

The testimony of an anonymous and somewhat disgruntled visitor to the Museum at this period (published in Article II of the *Magazine of Natural History* for May 1828) is of interest. It was sent in the form of a letter to the editor, dated March 1828 (signed with the initial "B") and purported to be some observations on the causes that had retarded the growth of natural history in this country, and on the "defective state of our Public Museums", in which the correspondent opines "It is more than twelve years since I was induced to expect that a scientific arrangement of shells would be undertaken; but after visiting the Museum for ten years . . . I discontinued my visits, as there appeared every probability that the present generation would pass away before it was accomplished. There were, indeed, some cases, with shells placed to amuse the spectator by the splendour of their colours, or the beauty of their forms; but there was no systematic arrangement of them, nor were the shells labelled or described".

This account confirms the suggestion already made that the shells were not fully labelled in the early 1800's. It is evident that some improvement was expected from 1816 onward, during the régime of W. E. Leach, but for various reasons this did not materialize. By 1826, "B"'s patience was exhausted, and visits to the Museum were discontinued, but oddly enough it was just at this time that concrete results of Children and Gray's efforts began to be seen in the public gallery, as proved by the *Synopsis* of 1827 noted above. The publication of "B"'s criticism in May 1828 must have prompted some well-meaning friend to suggest a visit to the British Museum, for in the very next issue of the *Magazine of Natural History* (Article II, July 1828) "B" hastens to make amends, saying *inter alia* "I can truly say, it gave me much pleasure to observe that a spirit of improvement had visited the British Museum, and that some of the arrangements . . . were at length accomplished in a satisfactory manner". Room No. 8, "B" graciously observes "contains the collection of recent shells, in 26 cases, well arranged, and conveniently displayed for inspection. The names of Lamarck are on one side, and those of Linnaeus (which are here more generally known) on the other". But even this improvement did not satisfy, for having previously complained that the earlier exhibit of shells had been arranged merely for the splendour of colour or beauty of form, "B" now regards the longed-for systematic collection "rather as a useful

than splendid one, compared even with private collections in this country". The only clue to the identity of this anonymous critic is a definite bias in favour of the Paris collections, which were considered to be far in advance of our own.¹ It is some consolation to the museum worker to know that it was just as difficult to satisfy everybody over a century ago as it is to-day.

After 1827 the mollusca collections continued to grow apace, due largely to the continued interest of J. E. Gray, who with the assistance of Mrs. Gray was personally responsible for their arrangement. By 1841 the exhibited series alone filled thirty-eight cases. By 1856 this number had increased to fifty-two, until finally the exhibited collection filled well over 200 cases.

During all these years from about 1802 until 1936, when the large shell gallery at South Kensington was closed to the public, the Cracherode shells formed an integral part of the exhibited series. The writer well remembers seeing tablets marked "Mus. Crach" among the many thousands of shells comprising examples of every known family and genus arranged in systematic order, which were always on view for study by regular and casual visitors to the Museum. Even to-day a few Cracherode shells—notably a polished Ear Shell (*Haliotis iris*), in the case devoted to shell structure, and a group of red and white Thorny Oysters (*Spondylus americanus*), both mentioned in the *Synopsis* of 1809—are still on view in the much smaller post-war gallery allotted to the mollusca, which was arranged and opened in 1951.

In spite of long exposure to the light, the Cracherode shells are still in fairly good condition. The large number of specimens available makes it economically impossible to segregate them all from the General collection, but a representative series including recently recognized types and figured specimens has been set aside, to make the Cracherode collection comparable with those of Sloane, Banks and Pennant now kept as separate units.

3. NOTES ON THE CRACHERODE MANUSCRIPT CATALOGUES

There are four manuscript catalogues connected with the Cracherode collection in the British Museum (Natural History), two of which are preserved in the Department of Minerals and two in the Department of Zoology. Three of these volumes are in quarto and one in octavo, two of the quartos dealing with minerals, fossil shells, corals and echinoderms, and one with recent shells, corals and echinoderms. The remaining octavo contains recent shells only. One of each of these two pairs of catalogues is a fair and well-written copy of the other, stating on the title page of each that it was compiled from a catalogue prepared by George Humphrey, the dealer who supplied Cracherode with the specimens (Pl. 20, fig. 1.). This declaration is now known to be partly true of the mineral catalogue, but quite untrue of the one dealing with the recent shells.

¹ It is quite possible that the anonymous critic may have been Mrs. Sarah Bowdich (1791-1856), wife of T. Bowdich (1791-1824) the well-known conductor of the Mission to Ashantee, and author of the *Elements of Conchology* published in Paris and London in 1822. Mrs. Bowdich was versed in conchology, having drawn all the plates for her husband's work. She also contributed several articles under her own name in the early numbers of the *Magazine of Natural History*, mostly in praise of the work of Cuvier, with whom she and her husband stayed during their residence in Paris,

The known hand-writing of the original mineral catalogue shows that it was certainly started by Humphrey, and then apparently handed to Cracherode with the representative collection systematically arranged and numbered. To this first series Cracherode continued to add items from time to time, entering each one in his own hand, and continuing the consecutive numbering from Humphrey's last entry.

There is no doubt that the small, rather crabbed writing in darker ink (Pl. 21, fig. 2.), is that of C. M. Cracherode, for it has recently been compared with the carefully written catalogue of his library (in his own autograph) now preserved in the Department of Manuscripts at Bloomsbury (Add. 11360). Further proof may be found in the personal monogram formed from the initials "C. M. C." written upon the fly-leaf of the library catalogue, which is the counterpart of one in miniature on the fly-leaf of the mineral catalogue dated 1788. This was the year in which Cracherode's taste for acquiring natural history specimens may be said to have started.

The Humphrey-Cracherode mineral catalogue, although numbered, does not include the prices paid for individual specimens which appear in the fair copy, and it therefore seems likely that Cracherode kept Humphrey's original priced labels with the specimens, perhaps in the small "cards" then in vogue.¹ The possibility that there were other priced catalogues remaining in Humphrey's possession in 1799 and lent for copying has not been overlooked, but the presence of several rough notes and computations of the number of species in the collection in E. W. Gray's writing, bound in with the original Cracherode catalogue, indicates that it was from this and the Humphrey labels that he compiled the fair copy, destroying the labels when the work was completed.

The title page of the octavo catalogue containing the recent shells, dated 1791 by Cracherode, bears a note in the autograph of J. E. Gray to the effect that it was the work of Edward Whitaker Gray. A further note was added by E. A. Smith on the fly-leaf stating that "This is interesting as showing the large prices fetched for some shells at that date". Neither J. E. Gray nor Smith seem to have connected this small catalogue with Cracherode, although the wording of the entries is almost identical with that of the fair copy (Pl. 22, figs. 4 & 5), and thus it appears in the printed library catalogue of the British Museum (Natural History) (Vol. 2, p. 711, 1904) as a priced catalogue of shells by Edward Whitaker Gray, with Smith's brief observation attached.

¹ Many items in the *Portland Catalogue* of 1786 consist of varying numbers of "cards" containing small shells; Lot 2073 for instance comprises "Twenty-five cards containing various species of univalves" and Lot 2193 "Seven cards of rare univalves". Although this suggests that small shells were glued to card mounts for safety, it is now known that the cards mentioned so frequently were in fact early plain-backed playing cards utilized by collectors for specimen trays. Instructions for making such trays may be found in a letter from Lewis Morris to his brother William Morris of Anglessea in 1756, recently quoted by Matheson (1955, pp. 264-5) in which Lewis says "Cards can be bought . . . at 4½d. and 6d. a pound, taking two pound together . . . They are such as have small blemishes not fit to be put in ye packs". He then goes on to explain in some detail the making of these trays or "Boats" as he calls them. The Morris brothers were friends of Thomas Pennant and it is interesting to record that a few contemporary examples of card boats have been found in the latter's shell collection in the British Museum, Natural History, one or two of which still retain the playing card motives (notably a complete three of spades) on the reverse. Trade and invitation cards were also used for this purpose, until at a later date properly made cardboard trays were supplied by natural history dealers.

This whole catalogue, written in three parts (not two as stated in the B. M. catalogue entry quoted above) was the work of C. M. Cracherode and compiled between the years 1791 and 1799. The writing, although crabbed and at times palsied, is quite legible but scarcely compares with his finely-written library catalogue, for there are numerous alterations and erasures throughout, due no doubt to unfamiliarity with the objects themselves. Unlike the mineral catalogue, the shell catalogue does not give the number of the entries, but the price paid for each item is included, with some additional information not entered in the fair copy made by E. W. Gray in 1801. Part I of this small shell catalogue is devoted to Univalves (A to M only); Part II Bivalves and Part III Multivalves. Corals and echinoderms are not included, but appear in the form of an appendix in the fair copy, which again suggests that Humphrey's labels were with the specimens when received in 1799.

As already stated, the two fair copies made from Cracherode's originals were certainly the work of Edward Whitaker Gray, great-uncle to John Edward and a former Keeper of the Natural History Department and Secretary of the British Museum. Here again authorship has been satisfactorily proved by comparison with some E. W. Gray letters preserved at Bloomsbury (Add. 33981-59 & 63), and also with his signature in the Charter Book of the Royal Society of London, of which he was elected a Fellow in 1779 and Secretary in 1797.

It would have been difficult even for an expert to identify correctly all the shells in the Cracherode collection at the time of its reception. E. W. Gray had the whole of the Natural History Department, (which then included antiquities and coins) in his custody, and could do little more than compile a numbered list from the manuscript catalogues and Humphrey's labels. Humphrey was familiar with the 10th and 12th editions of Linne's *Systema*, but probably not with the 13th (Gmelin) edition of 1791, so that if a Linnean name could not be found for a specimen he frequently resorted to those of Solander used in the Portland and Calonne catalogues, together with the old established vernacular names, modified forms of which are still in use to-day.

E. W. Gray made a valiant attempt to supply the names of Gmelin and Chemnitz wherever possible. These he entered under the appropriate number on the opposite page of the catalogue, frequently leaving blanks where the species could not be satisfactorily identified from available literature, or had not then been described. Humphrey was a master of the conchological vernacular, so that the Cracherode manuscript catalogues form most interesting "repositories" of such euphonious names as the Brindled Music Shell, the Coronated Wild Music, the Guinea Admiral, Undulated Midas's Ear, the Pullet's Egg Anomia and the Furbelowed Clamp.

Notwithstanding the passing of rather more than 150 years since Humphrey's day, the examples quoted above are no more fanciful than many used quite recently. An American author has ingeniously found or devised a vernacular name for each of the 1,100 scientific names used in his book, from which it appears that the following short paragraph, concluding a list of current vernacular names in the article "Conchology" in the *Encyclopaedia Londinensis* (1810, p. 36), still retains a great deal of truth. "Hence it is evident that trivial names may be applied to shells as

far as the species go, or as the fanciful imagination and invention of man can possibly extend ”.

A number of the later Cracherode shells came from the famous Calonne collection sold by auction in 1797. Their origin was noted by Humphrey on his labels with the letters “ M. C. ” plus the Calonne catalogue numbers—details which were recorded by Cracherode in his own list but not copied by E. W. Gray in the Museum copy. This is a pity, because it is now difficult to trace Calonne specimens among the univalves beyond the letter “ M ”, where Part I of Cracherode’s own catalogue ends, and where E. W. Gray apparently continued from the Humphrey labels. The Calonne shells are of interest, for in many instances they came from the Portland collection and were named by Solander. Cracherode paid heavily for these shells, the twenty-two marked “ M. C. ” in his catalogue costing the not inconsiderable sum of one hundred pounds sixteen shillings.

Humphrey’s prices were not always so high, for there are several items charged at as little as one, two or three shillings. The highest price paid was fifteen guineas for a single fine specimen of *Voluta imperialis* or Coronated Wild Music, from Luconia (Luzon, Philippine Is.).

It would be tedious to dwell too long on the various items of interest in these manuscript catalogues at this point, but one cannot help noticing the care with which the fair copies were compiled by E. W. Gray, long before separate guides to particular groups were printed and published. They were apparently kept with the collections for the use of students who eventually obtained permission to study the specimens in detail. E. W. Gray’s clear copperplate style (rather more formal than his usual writing) was ideal for this purpose, with the popular and scientific names equally in evidence.

4. USE MADE OF THE CRACHERODE COLLECTION BY VARIOUS AUTHORS, WITH NOTES ON THE TYPES AND FIGURED SPECIMENS

When endeavouring to trace every author and all the specimens mentioned or described from an early collection, it is easy to overlook the obvious while searching for the obscure, and the following account of authors who have used the collection during the last 150 years is therefore offered with some slight reservation.

Cracherode is known to have welcomed visitors wishing to examine his books, prints and coins, but no mention of his shell collection appears to have been made in contemporary literature, although it must have been one of the finest in London at the time. George Perry (f. 1810), appears to have been the first author to have used the collection after it became available to the public at the beginning of the nineteenth century. Little is known of Perry, beyond the fact that he published two works on natural history during 1810 and 1811, the first being the *Arcana*, and the second the more notorious *Conchology*. Since he figured a few Cracherode shells, and mentioned the collection in glowing terms in both of his books, a short account of these and the effect they had on subsequent authors should find a place here.

The *Arcana* was a general miscellany covering several groups, similar in format

to the *Naturalists' Miscellany* of Shaw & Nodder. It appeared in monthly parts, from January 1810 to September 1811, each part consisting of four colour plates with appropriate letterpress. For some reason the work aroused little interest until early in the present century, but the larger and more expensive *Conchology*, which contained a curious assemblage of good and bad figures, caused a great deal of controversy several years after its first appearance, when J. E. Gray decided to accept some of the previously-ignored names proposed therein.

These were added to the list of additions to his *Monograph of Cypraea* published in April 1828, which also included references to the eighteen species of *Cypraea* then being figured in Wood's *Supplement* published in the following month. Under *Cypraea princeps* Broderip, Gray noted "The name must be changed, as it is *C. Valentia* of Perry's *Conchology* t. 23, f. 2 where the individual specimen here described is well figured". To this was added a footnote saying "I have ventured to refer to this work as I consider it just that every author should be quoted and this author has anticipated Lamarck, Swainson and Sowerby in several species"—a seemingly mild and honest statement that caused so much resentment and adverse criticism from G. B. Sowerby (first of the name), and other authors that no further credence was given to Perry's work until nearly the end of the nineteenth century.

While it must be admitted that much of the letterpress in both the *Arcana* and the later *Conchology* is not particularly good, the figures (although at times fantastic and of an almost dream-like quality) are sometimes excellent and clearly recognizable. The descriptions, meagre or prolix according to the fancy of the author, are sufficiently clear for there to have been no real reason to reject Perry's valid but unwelcome names, even if it meant upsetting those established by the various British authors who resolutely refused to study their predecessor's book.

Current opinions published by Sowerby and his fellow collaborators can of course be found in the pages of the *Zoological Journal*, but as these volumes are not always easily obtainable it may be permissible to quote a few of the opinions that led British workers to ignore Perry's work.

The first hint of displeasure from the Sowerby stronghold appeared in a footnote by G. B. Sowerby, appended to some critical remarks upon J. E. Gray's *Monograph of Cypraea* by L. W. Dillwyn in 1827 (p. 315), in which the latter merely referred to the *C. Dama* Perry. This was sufficient to call forth the remark that Perry's work was "the worst of all bad books, it ought never to be cited". One can imagine Sowerby's displeasure when shortly afterwards Gray added the footnote quoted above, accepting more of Perry's names. Sowerby's immediate reactions were conveyed by letter to W. J. Broderip (later published in the *Zoological Journal*) in which the former gave an extremely destructive account of Perry's *Conchology*, accusing him of dreaming of extraordinary shells and committing them to paper immediately on waking! The letter contains more in the same vein, even the principal editor of the *Zoological Journal*, N. A. Vigors, added a note on his own behalf and that of his numerous editorial colleagues, to the effect that "It is the unanimous opinion that Perry's *Conchology* is not a work worthy of being cited as an authority."

The result of all this criticism was far-reaching in its effect, for, as may be seen from the conchological publications of British authors such as Wood, Burrows and

Hanley, there are few references to Perry's names (except perhaps as synonyms) although the *Conchology* must have been well known to all of them—for according to Hopwood (1946, p. 152) copies were still being printed as late as 1836.

Feelings continued to run high well into the 1840's; during the course of his great *Conchologia Iconica*, Lovell Reeve paused several times to vilify Perry, notably in the description of *Ranella pulchra* Sowerby, in which Reeve says he "cannot agree with M. Deshayes in giving priority to the name assigned to the 'Finned Frog' by Mr. Perry. That author has long forfeited the notice of scientific men by his absurd names and pantomimic display of figures". (1844, *Ranella*, sp. 47.) Again, in the description of *Cypraea melanostoma* Sowerby (Ex. Leathes MSS.), Reeve makes the strongly-worded observation that "If every charlatan who sets himself up for a naturalist, with brush in one hand, and writing tool in the other, is to be regarded as an authority on scientific matters; all the zoological signboards in the Kingdom might be quoted as figures of reference. For my own part, I consider the 'Camelopard of Perry' should no more enter the nomenclature of zoology than the 'Red Lion of Brentford'" (1845, *Cypraea*, sp. 17).

Reeve was referring of course to the *Cypraea camelopardalis* Perry 1811 (pl. 19, fig. 5) which caused so much annoyance to Sowerby when Gray adopted it "in opposition to that cited from the MSS. of a scientific gentleman". Incidentally, it is interesting to see that the Cracherode specimen of *C. Camelopardalis* still bears Children's original label *C. melanostoma*, which rather indicates that as an editorial collaborator at the time of Vigor's note condemning Perry's work, he felt bound to retain the name used by Sowerby in opposition to Gray (Pl. 25, fig. 15g).

Both Sowerby and Reeve realized only too well that much of their careful work would be upset by the general adoption of Perry's nomenclature, and their opinions were therefore not without bias. By the force of their displeasure they succeeded in keeping this awkward volume in the background for the rest of their lives, an obscurity from which it did not emerge until referred to by Melvill in 1888 and by both Hedley and Gatliff in 1902.

Since the above notes were prepared, John Q. Birch of California has published a note on the resurrection of early names in his *Minutes* (1955, 152, pp. 2-3), in which he makes a belated attempt to uphold the dictum of G. B. Sowerby, W. J. Broderip and his followers in suppressing Perry's names. He apparently ignores the happenings of the last fifty years, for even now he considers it presumptuous "for a student in 1955 to bring up names rejected by such scholars, thereby upsetting over a century of conchology". Others have since joined in the discussion, which continues.

It has already been mentioned that Perry referred more than once to the Cracherode collection in his *Conchology* of 1811, and brief examples of these references are given below. The first to be noted is the figure of a shell described as *Polyplex rugosus* (pl. 9, fig. 2) stated to be in the collection of Mr. Cracherode in the British Museum. This appears to be some form of *Nucella*, but a thorough search has failed to reveal the original among the Cracherode shells. The second reference is to a bivalve shell described as *Donax variegatus* (pl. 58, fig. 1) which can safely be assigned to *Egeria radiata* (Lamarck) taken from a specimen from which the thick brown periostracum had been removed by polishing, in order to show the bluish-green

rays on the shell surface. This also is missing and may have been disposed of years ago as a spoilt specimen. Polished shells were much in vogue in Cracherode's day and long after, for there are still several fine specimens of polished mussel and pearl shells which at one time formed part of the exhibited collection.

Perry's pl. 59, dealing with the genus *Spondylus* is of particular interest, for he follows the description of his quite remarkable figures with a footnote saying that "These shells are found chiefly in the warmer climates of the globe, and from a numerous assemblage, the greatest variety of which, in one collection, may perhaps be seen in the museum of the late Mr. Cracherode, now united to that most valuable repository, the British Museum". This was no exaggeration, for the Cracherode *Spondylus* must have formed a considerable ornament to the Museum collection, which could previously have had only a few rather dingy examples from the earlier Sloane collection. It is a pity that Perry chose to figure the odd-looking specimens shown on his plate, when he had access to those he praised so highly.

Before concluding this short account of Perry's *Conchology* it should be recorded that although no Cracherode specimens figured by him have been traced, an opportunity has nevertheless occurred to judge the extent to which the author erred in his figures. Pl. 24 is devoted to some fairly good representations of various species of *Conus*. Fig. 3, named by Perry *Conus fasciatus*, was apparently an attempt to portray the *Conus genuanus* Linné, the original of which was stated in the text to be in the British Museum (not on this occasion in that of Mr. Cracherode). At this time (1811) the Museum shell collections comprised only those of Sloane and Cracherode, so Perry's figured specimen could only have been in the former. On examining the series of *Conus* included in the recently recognized Sloane shells this was found to be so, the shell still retaining the Sloane catalogue number 2788. This specimen is still in excellent condition and shows that the artist kept to the general idea of the shell but, with the usual contumacy of the race, arranged the pattern more to his liking. Thus the typical semaphore-like dark brown dots and dashes interspersed with white became regular brown squares in the finished plate with some imaginary blue and brown lines added for full measure, almost destroying the true character of this well-known species. Although no defence of Perry is deserved or intended, it may be only charitable to suggest that some of the more peculiar figures may have been due to the artist engraver's interpretation of drawings passed on to him for reproduction, with the unfortunate results so bitterly resented by Sowerby and Reeve.

Early in the present century (1902) a more balanced view was taken of Perry's work, when Hedley and Gatliff independently pointed out its importance to Australian naturalists, particularly as Perry had access to the collection of Lt.-Col. William Patterson, Lieutenant-Governor of New South Wales from 1800 to 1802, who is acknowledged more than once in the text to the plates. In addition to the British Museum collections and his own possessions, Perry also used no less than twenty-four contemporary private collections—including those of Lady Wilson, Lord Valentia (after whom he named *Cypraea valentia*), Dr. Coombe, Dr. Lettsom, Humphrey, Bullock, Jennings, Stutchbury, Latham and Spurrutt. From this it is obvious that he had the choice of much new and unfigured material, and it is difficult

to understand why he did not confine his new names to these shells, rather than interfere with those already established. Changing the well-known *Oliva porphyria* (Linné) to *Oliva Leveriana* in "honour" of Sir Ashton Lever (pl. 41), was quite inexcusable.

Perry's *Conchology* is of value to the taxonomist by virtue of the names adopted or mentioned as synonyms by J. E. Gray (1828 & 1847); H. & A. Adams (1853-58); Hedley & Gatliff (1902); Thiele (1931-35) and Tucker Abbot (1954). The book has also a commercial value, the fine hand-coloured stipple engravings having a certain charm of design and colour, which appeals strongly to the producers of artistic trifles, a form of vandalism that is partly responsible for the extraordinary increase in the market price of the volume, from 28s. in 1912 (Hopwood, 1946, p. 153) to as many pounds at the present time.

The less-known and much rarer *Arcana* seems to have lain unnoticed until 1912, when Mathews & Iredale revived it as "An overlooked work" dealing very thoroughly with the birds and shells (many from Australia) figured and described therein. As the *Arcana* in some instances pre-dates the *Conchology*, it formed a veritable sepulchre from which to resurrect long forgotten and unheard-of generic and specific names, which had to be adopted under the rule of priority.

Little further need be said of the merits or demerits of the *Arcana*, except to deal with direct references to the Cracherode collection. Two of these are noteworthy, the first in a part of the text to pl. 47, describing *Aranea gracilis*, in which the author says "The most elegant specimen of this shell which we have hitherto seen, is that which was in the late Mr. Cracherode's collection and now deposited in the British Museum, the comparative value being appreciated by the number, length and preservation of the spines". Although praising the Cracherode shell Perry did not state that it was the original of his figure, and it may therefore have been obtained from one of his numerous contacts, but there was certainly a suitable shell in the collection, No. 295 in E. W. Gray's catalogue, listed as *Murex tribulus* Lin. *Venus's Comb or the Double Thorny Woodcock from Hainan*. The only comparable specimen now present, however, is No 296 *Murex tribulus* var. Lin. *The Great Thorny Woodcock from China* (*Murex scolopax* Dillwyn), which has less numerous spines than the original of Perry's figure. Mathews & Iredale (1912, p. 12) considered this figure to represent the *Murex tenuispina* Lamarck, and allowed that well-established species to be superseded by *A. gracilis* Perry. However, a much more accurate figure of *tenuispina* appeared in the *Conchology* of 1811 as *Aranea trivemis* (pl. 44, fig. 3.). It might be suggested that Mathews & Iredale were mistaken in identifying Perry's *Aranea gracilis* as *M. tenuispina* Lamarck, and that this figure represented a rather similar species, later described and dedicated to a famous malacologist, but to print the name of this species would burden the synonymy to no useful purpose.

The second reference to be noted is in the text describing *Strombus nigricans* (obviously the *Strombus chiragra* Linné), in which Perry praises such gifts as Brander's fossils to the British Museum, at the same time eulogizing the nobility of mind required to "appropriate the advantages of fortune to the improvement of science and knowledge . . .". "Nor can we here omit the princely collection of shells formed by the gift and legacy of Mr. Cracherode, which has not, nor ever will be

rivalled, containing specimens which cannot be removed or injured. Owing to the judicious arrangement of the British Trustees, it will be a standing monument of the general taste of the English nation ”.

This excerpt gives some idea of the phraseology used throughout the text of the *Arcana*, which contains rather a small amount of useful information among a great deal of editorial padding. However, the stipple engravings of shells, drawn by G. Perry and engraved by T. L. Busby, are on the whole more reliable than those in the *Conchology*, and may now be regarded as the most useful part of this extremely rare book.

The next author to be considered is the gifted but unfortunate Dr. William Elford Leach F.R.S. (1790–1836), who would have had an even more brilliant career if his health had not broken down early in life, forcing his retirement from the Assistant Keepership of the Natural History Department of the British Museum, before he had held the post long enough to make much impression on the apparent chaos left behind by his predecessor George Shaw. The unfortunate state of the Zoological collections at the time of Leach's appointment (1813) has been recorded (through not without prejudice) in the personal reminiscences of William Swainson (1840, pp. 237–40), in which he says his friend's name “ will be long cherished by those who remember his warm, frank, and generous disposition ; and will ever rank high in the science of this country, which, more than any other man, he released from the thralldom of prejudice and bigotry ”.

Leach was particularly interested in the mollusca but much of his work remained unpublished at the time of his death in 1836—notably the unfinished manuscript of his *Synopsis of the Mollusca of Great Britain*, written between 1818 and 1820.¹ This was later purchased, together with the original plates, by J. E. Gray and with the permission of Leach's family was eventually edited and published in 1852, in the belief “ that it was an act of justice to lay before the public the favourite and last work of my late friend ” (Preface, p. vii).

Work published by Leach himself need only concern us here, however, and even this is confined to the first two of the three volumes of the *Zoological Miscellany* published between 1814 and 1817. As already noted in the account of the Sloane shells (Wilkins, 1953, p. 11) Leach's three volumes were practically a continuation of Shaw & Nodder's *Naturalists' Miscellany* completed in 1813, Nodder continuing to produce the engravings, but with greater accuracy than in the previous series. Of the thirty-three shells figured (many of which were new species), eleven have been traced to the Cracherode collection and recovered, including nine holotypes of Leach's new species. Since copies of the original *Miscellany* and even Chenu's reprint of 1845 are now rare works the English part of the brief descriptions are repeated here in full, together with the Cracherode catalogue entries.

As previously noted in the account of the Banks collection, it is now known to which species certain unpublished manuscript names refer. Unless these have already been published by Humphrey in the Calonne catalogue (1797) or used by

¹ The first 116 pp., in proof only, were partly circulated in 1819.

Dillwyn (1817) as synonyms, they have been discreetly omitted from this list. Current generic and specific names, based largely on Thiele's *Handbuch* (1931-35) are printed in bold face italics at the head of each description, on the left hand side of the pages.

*List of Cracherode Specimens Figured and Described
by W. E. Leach in the Zoological Miscellany 1814-15*

VOLUME I. 1814

1. *Ensis ceylonensis* (Leach)

Holotype.

Page 22. Tab. VII (dated February, 1814)

Solen ceylonensis—Ceylon Razor-shell

"Shell strait, with one extremity rounded, the other obliquely truncate; the hinge terminal, with one tooth in each valve; the teeth unequal.

Inhabits Ceylon, where it seems not to be an uncommon species. The striae at the base . . . run longitudinally, and turn abruptly in a transverse direction, giving an appearance to the shell, of being obliquely divided into two parts, by a line running in a diagonal direction from one corner to the other."

Crach. No. 183. *Solen vagina*, Lin. *Cross-striped Solen from Tranquebar* . . . 8s.

	Length	Height	Thickness
Dimensions of Holotype . . .	124 mm.	20 mm.	13 mm.

Type locality: Ceylon

Other records (*vide* B.M. collections):

Aden; Bombay; Java; Chandipur; Ceylon.

The author's type locality seems reliable, as the species is common to the Indian Ocean generally; Humphrey's Tranquebar is itself a likely locality, though it appears also to have been an early centre for the distribution of Indian Ocean material by J. G. Konig and the Moravian Brethren mentioned in Solander's note to Banks (see p. 125 above).

2. *Haliotis ruber* Leach

Holotype.

Page 54. Tab. XXIII (undated)

Haliotis ruber—Red Earshell

"Red, transversely waved, with elevated, longitudinal, wrinkled lines.

Inhabits New Holland."

Crach. No. 233. *Great Broad Ear Shell. New South Wales* 1 is. od.

	Length	Breadth
Dimensions of Holotype	116 mm.	92 mm.

Type locality: "New Holland" here designated Port Jackson.

Other records: New Holland (Martyn 1784).

Port Jackson (Whitelegge 1889).

New South Wales (Allen, 1950).

This species is now known in New South Wales as the Sydney or Warty Ear Shell, very common on rocks and in crevices at low tide (Allan, 1950, p. 54). A larger polished specimen in the collection is one of those particularly noticed in the *Synopsis* of 1809. Leach in 1814 and Wood in 1828 continued to quote New Holland for New South Wales, although Humphrey had used the correct name for this part of Australia many years before.

3. *Padollus scalaris* Leach

Holotype.

Page 66, Tab. XXVIII

Padollus scalaris—Staircase *Padollus*

"Whitish variegated with rufous; whirls with three longitudinal elevated ribs; basal volution staircase-like above, with the inferior rib knotted, middle rib perforated (with five holes), upper rib longitudinally striated, the spaces between the striae wrinkled.

There is one specimen of this rare shell in the British Museum, which is the only species of the genus that I have had an opportunity of examining. Country unknown.

The number of perforations may probably not be constant; the character is therefore not introduced without caution."

Crach. No. 240. *The broad tuberculated Ear Shell from Hainan* 8s.

	Length	Breadth
Dimensions of holotype	33 mm.	25 mm.

Type locality: Swan River, S. West Australia (here designated).

Other records: Pai-ho, N.E. China (Cuming).

Java and Australia (Tryon, 1890).

Swan River (Cuming).

Western Australia (Allan, 1950).

From available records the distribution would appear to be from the Gulf of Po Hai (North of the Yellow Sea) to Hainan, through the Java Sea to the West Coast of Australia.

The Chinese localities, however, may be doubtful, for the species was not recorded by Yen in his *Review of the Chinese Gastropods* (1942), in which he notes the unreliability of some of the early material said to come from China, hence the choice of the well-known Swan River as the type locality. Lamarck gives Java as the locality of his *Haliotis tricolor* (1822, p. 218), which is synonymous with the present species.

A certain amount of confusion has arisen among authors (notably Reeve, 1846) in mistaking the *Padollus rubicundus* Montfort 1810 for Leach's *P. scalaris*. But a study of Montfort's figure (1810, p. 114), and his quite definite locality Africa leaves little doubt that the *Padollus rubicundus* Montfort was the African *Haliotis parva* Linné. The latter was well figured by Reeve (pl. 15, sp. 53 a. b.) who, with his frequent inattention to detail, added the much-used *Hab*?, although Linné clearly gave *O. Africano* as the locality (*Linn. Syst. Nat.* ed. 12, p. 1256, 746). *Padollus scalaris* Leach appears elsewhere in the literature as *Haliotis tricolor* Wood (1828) and *H. canaliculata* Schubert & Wagner (1829).

It should be noted that the type specimen is immature, full-grown shells reaching a maximum length of 100 mm.

4. *Pteria chinensis* (Leach)

Holotype.

Page 86, Tab. XXXVIII

Fig. 1

Avicula chinensis—Chinese *Avicula*

"Dirty-citron colour, smooth, with two brownish-red radiating bands.

This pretty shell is found in the Chinese seas in great abundance. The letter a, points out the situation of the byssus or beard by which it adheres to rocks, corals, and other hard bodies."

Crach. No. 84. *Brown striped yellow Swallow Pearl Shell from China* 10s. 6d.

	Length	Height	Thickness
Dimensions of Holotype	60 mm.	35 mm.	13 mm.

THE CRACHERODE SHELL COLLECTION

Type locality: "Chinese Seas" here designated, restricted to Ticao, Philippines.
 Other records: Ticao (Cuming).

New Caledonia (Cuming).

Ceylon (Craven, B.M.).

Isle de France (Lamarck).

Aden (Shopland, B.M.).

Widely distributed in the Indian Ocean and parts of the Indo-West Pacific, this species varies considerably in size and colour, but the brownish-red radiating bands mentioned by Leach are usually discernible. Specimens in the Museum collection from New Caledonia measure 135 mm. in length, while those from the Philippines, Ceylon and Aden are approximately the size of the type. *Avicula crocea* Lamarck and *Avicula trochilus* Reeve are synonyms.

5. *Pteria morio* (Leach)

Holotype.

Page 86, Tab. XXXVIII

Fig. 2

Avicula morio—Black *Avicula*

"Black, striated concentrically; epidermis brown, elevated into undulations, which are arranged in lines radiating from the beak.

This rare shell was obtained from Pulo Condore, an East Indian Island, and is preserved in the British Museum."

Crach. No. 83. *Mytilus hirundo*. Lin. var. (*Margaritifera hirundo*). Large brown variety of the Swallow Pearl Shell with a small comb oyster adhering. From Pulo Condore

10s. 6d.

	Length	Height	Thickness
Dimensions of Holotype . . .	122 mm.	60 mm.	22 mm.

Type locality: Pulo Condore.

Other records: Malacca Strait (Cuming B.M.).

From the above records the range of this species appears to be rather restricted, but it probably occurs in other waters under different names—perhaps the very similar *Avicula castanea* and *signata* Reeve, said to come from Singapore and Madras.

Leach's type specimen (from which the adherent oyster has long since been removed), was figured for the second time by Wood in the *Index Testaceologicus* of 1825 (pl. 12, fig. 43) copied from Leach's figure but without acknowledgment, and with the locality Red Sea. In his monograph on *Avicula* (1857, sp. 71), Lovell Reeve gave an excellent figure drawn from the Cracherode shell, with the original locality Pulo Condore, but he unfortunately ascribed it to *Avicula savignyi*, a name published by Deshayes in 1830 (2, 100), and again in 1836 (7, 102), where Leach's *morio* was merely mentioned as a variety of Deshayes' own, and much later *Avicula savignyi*. Reeve attributes Leach's name to Dillwyn in his brief synonymy.

Similar inaccuracies, not uncommon at the time, occur throughout the many volumes of the *Conchologia Iconica* and do much to mar its usefulness, but even these mistakes cannot detract from the real beauty of the figures, the excellence of which "will for ever remain unrivalled" (Melvill, 1900, p. 347).

6. *Pinctada radiata* Leach)

Holotype.

Page 98, Tab. XLIII

fig. 13.

Avicula radiata—Rayed Bird Shell

"Shell griseous with purplish rays: epidermis concentrically elevated, with processes arranged into radiating lines.

This shell is generally supposed to inhabit the West-Indian Seas, but I have not been able to ascertain the truth of this conjecture.

The elevated processes of the epidermis, on close examination, seem to be membranaceous, with fine concentric rings of shelly matter deposited on them."

Crach. No. 82. *Mytilus margaritiferus* Linn. var. (*margaritifera occidentalis*)
West Indian Mother of Pearl Shell 10s. 6d.

	Length	Height	Thickness
Dimensions of holotype	55 mm.	56 mm.	23 mm.

Type locality : Here designated Gulf of Mannar.

Other records : Tranquebar (Wood, 1825).

Gulf of Mannar (B.M. collections).

Maldive Islands, Persian Gulf, Red Sea, Suez, South and East
 Africa, Malay Peninsular, N. Australia S. to Sydney (vide Jame-
 son, 1901 ; Prashad, 1932 and Hynd, 1954, and B.M. collections).

The Gulf of Mannar, chosen as the type locality of *P. radiata*, was still recongized by Hornell in 1951 (p. 53), as the most important pearl fishery in India. From an account of the fishing operations during March and April 1797 by H. J. Le Beck it appears to have been particularly flourishing during the late eighteenth century and the most likely origin of some of Humphrey's stock, for as the author says "no place in the *East Indies* abounds more with rare shells". Beck's excellent account, which includes an early attempt to describe the anatomy of *Pinctada*, was considered of sufficient importance to be reprinted in full in the *Annual Register* for 1799 (pp. 380-91).

Jameson (1901, p. 389) and Tucker Abbott (1954, p. 359) identify *Pinctada radiata* (Leach) with the West Indian or Atlantic Pearl Oyster, but a careful comparison of the recently recognized holotype with an extensive series from the pearl banks at Mannar, shows clearly that it is a typical example from the Indian Ocean and not from the Atlantic. In consequence Leach's name replaces the later *P. vulgaris* (Schumacher, 1817) the name by which the Eastern Lingah shells have usually been known. J. S. Hind (1954, pp. 113-4) discusses the merits of Schumacher's *P. vulgaris*, saying that his figure is too poor and his description too brief to be of any real value, and he therefore chooses the *Avicula fucata* Gould (1850) to replace it, noting that "This Australian species is conspecific with the lingah pearl oyster of the East Indies and the Persian Gulf". If this is so, the *P. radiata* (Leach, 1814) should be used in preference to the later *fucata* Gould, particularly as Leach's type specimen (Pl. 25, fig. 13) shows the same characteristics as Hynd's own figure of a typical *fucata* from Torres Straits (pl. 1). The transverse markings on the growth processes, said by Hynd to be absolutely diagnostic of the species, must surely be the fine "concentric rings of shelly matter" referred to by Leach in his original description.

Leach's original figure of *P. radiata* was clearly copied by Wood in 1825 (pl. 12 *Mytilus*, fig. 5), this time with acknowledgment to the *Zoological Miscellany*, but with the very suitable locality Tranquebar. The various species of the ubiquitous pearl oysters occurring in Oceania have also been discussed by Prashad (1932, pp. 99-102) and Iredale (1939, pp. 333-40), the latter suggesting the replacement of *P. vulgaris* Schumacher by *P. radiata* (Leach), but relating it to the Atlantic area rather than to the Indo-Pacific.

The widely distributed Lingah shells are fished mainly for the contained pearls, often of great value, the shells themselves being thin and of little use commercially. Fully mature specimens seldom reach more than 70 mm. in length, and even these are left derelict by the pearl fishers.

7. *Pinctada margaritifera* (Linné)

Holotype.

Page 108, Tab. XLVIII

Margarita sinensis—Chinese Pearl-shell

"Brown radiated with white ; internally pearly bordered with brown ; epidermis concentrically elevated, with processes arranged in somewhat radiating lines.

Inhabits the Sea of China, but is rarely found in such perfection as that exhibited in the annexed plate. It seems to have been confounded with the common pearl-shell."

Crach. No. 81. *Mytilus margaritiferus* L. var. *Lesser Chinese Mother of Pearl*
Shell

15s.

	Width	Height	Thickness
Dimensions of holotype	100 mm.	100 mm.	27 mm.
Type locality : China.			

It is curious that the observant Dr. Leach should have described this shell as a new species, for it is only a small *Pinctada margaritifera*. The species is known by many trade names, applying to the texture of shells from certain areas rather than to any real specific differences. The present specimen appears from the list supplied by Jameson (1901, p. 375) to be Black-edged Banda Shell, peculiar to the Malay Archipelago, China, Banda Sea and the Maldives, and compares favourably with trade samples so labelled in the Museum collection. Leach's new genus *Margarita* 1814, of which his *M. sinensis* is the type species, is a synonym of *Meleagrina* Lamarck 1812 and of the still earlier *Pinctada* Röding 1798.

8. *Pinna (Streptopinna) saccata* Linné

Figured specimen

Page 130, Tab. LVII.

Pinna saccata—Bag Pinna

"Shell smooth, bag-shaped (anteriorly at least), ribbed, externally abruptly produced, somewhat distorted. This rare pinna is readily distinguished from all other species by its distorted irregular form. Some specimens are ribbed from base to point, others only anteriorly.

Inhabits the Indian seas, and is esteemed a rare species."

Crach. No. 182. *Pinna saccata* Lin. *Satchel or Crooked Pinna from Pulo*

Condore £3 3s. od.

This Cracherode specimen is still in excellent condition and is a notable example of a species which, with the exception of the *Pinna Nuttallii* Conrad 1837 and one or two unimportant varietal names, has remained sacrosanct since it was first described by Linné in 1758. According to Winckworth (1929, p. 289) it is a widespread species, having been recorded from the Red Sea, Ceylon, S. Africa, Amboyna, Philippines, Sandwich Is., and Japan. Iredale recorded it from Queensland in 1927 (p. 333) designating a new sub-species *inuitata* based partly on colour variation—not a very reliable character in a species which normally ranges from white to yellow, amber, red, purple and almost jet black !

9. *Haliotis cracherodii* Leach

Holotype.

Page 131, Tab. LVIII

Haliotis cracherodii—Cracherodean Earshell

"Bluish-black above, umbo lateral-dorsal ; internally pearly and iridescent.

The shell from which the annexed figure is taken, forms a part of that splendid collection of shells bequeathed to the British Museum by the late Rev. C. M. Cracherode, whose name it bears. It is said to be a native of the Californian coast, and is generally esteemed a rare species."

Crach. No. 237. *Haliotis* . . . *Blackish-green Ear Shell, from California* . . . £4 4s. od.

	Length	Breadth
Dimensions of holotype	85 mm.	70 mm.
Type locality : California.		

Other records : Baja, Lower California (B. M. collections).

Coos Bay, Oregon to Lower California (Tucker Abbott, 1954).

This is the well-known Black Abalone which occurs fairly abundantly from Oregon to L. California. It is edible and particularly enjoyed by the Mexicans. There are normally eight holes in the shell, but these may vary in number or even be entirely absent, a feature that has

given rise to several subspecific names, notably *imperforata* Dall, *holzneri* Hemphill, and *lusus* Finlay.

Haliotis californiensis was described by Swainson in the *Zoological Illustrations* in 1821 (Ser. 1, 2, pl. 80) based on the smoother 12-16 holed form of *H. cracherodii*, since recorded on the islands from the Farallones to Guadalupe (Keep, 1935, p. 144), and now regarded as the only reliable sub-species. Incidentally, *H. cracherodii* Leach provides good material for the study of shell pigments, for the distinctive bluish-black outer layer of the shell is said to contain, among other substances, a blue acid-soluble pigment related to indigotin, which has been the subject of more study than any other single pigment extractable from shells (Comfort, 1949, p. 86).

10. *Clithon coronata* Leach

Holotype.

Fig. 11

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Page 122, Tab. CIV

Clithon coronata—Crowned Clithon

"Black; first whirl above, with elongate, subsetaceous spines; epidermis obliquely elevated into lines; pillar obtusely unidentate.

The locality of this species is not known; it is certainly distinct from the *Clithon corona* of De Montfort."

Crach. No. 354. *Nerita corona*. Linn. *Aculeated fresh-water Nerite*. From
the Ganges £3 3s. od

Length

22 mm.

Width

24 mm.

Length of

spines

22 mm.

Type locality: Here designated Mauritius.

Other records: Rodriguez & Mauritius (B.M. collections).

Malagachian Islands (Baker, 1923).

Mauritius (Viader, 1937).

The Cracherode specimen is definitely the original of Leach's two figures shown on pl. 104 of the *Zoological Miscellany*, but unfortunately both were reversed by the engraver. When figured in 1815 the spines were already damaged, the missing portions being indicated in the engraving by dotted lines; since then one more spine has gone, but even so the shell can still be recognized as the original.

As pointed out by Baker (1923, p. 156) Montfort clearly figured this species when describing his genus *Clithon* in 1810 (2, p. 326), but attributed it to *Nerita corona* Linné, a different species. The spines in De Montfort's figure are at a different angle to those in the type specimen, in which several spines rise at right angles to the shell surface—a feature common enough in a long series, that may have led Leach to believe his shell to be distinct.

Judging from the price charged by Humphrey, the species must have been considered rare at the time, and the Cracherode shell was probably the only one available for study. *Clithon coronata* was renamed *longispina* by Recluz in 1841 (p. 312), Leach's earlier name being quoted but denied priority in the rather carefree manner of the period. Humphrey's locality of the Ganges seems to be without foundation, for none of the spined Neritinae occur in India.

11. *Anostoma octodentatum* Fischer de Waldheim

Figured specimen.

Page 128, Tab. CVII

Tomigeres ringens—Grinning Tomiger

Fig. 10

"Shell whitish, spotted with ferruginous, the spots often running together; mouth multi-dentate, the teeth unequal. The mouth varies extremely in the number and proportion of the teeth; the internal lip generally has two teeth, rarely three; the exterior lip has from three to five teeth, which are always of unequal sizes."

Crach. No. 269. (*Lucerna antiqua*) *Helix*—*Antique Lamp from Brazil* . . . £8 8s. od.

This peculiar land shell, with its upturned mouth, has greatly intrigued conchologists since it was first figured and described by Nehemiah Grew in 1681 (p. 136, pl. 11), in which he calls it the Fore-Whirled Snail (*Cochlea Turbine antico*), because "contrary to all other shells I ever yet saw, it hath the *Turban* or *Whirle* made before . . . The assertion of *Aristotle* that the *Turban* always stands behind, is here proved false".

Later authors, including Leach, referred this species to the *Helix ringens* Linné (the Grinning or Ringent Snail particularly noticed in the *Synopsis* of 1809); but Hanley (1955, p. 363) after due deliberation concluded that the *Anostoma globulosa* Lamarck was the true *ringens* Linné, a decision with which Pilsbry agreed (1902, p. 114-5). This confusion arose because Linné described his species from a specimen in the Tessinian Museum, of which no exact figure then existed, references being given to figures which did not precisely fit the description but only bore a resemblance to it.

No hint of locality was given in Leach's description quoted above, and it seems that in this and other instances, he did not bother overmuch to consult the records then available, since the correct locality agrees in the Cracherode and Calonne catalogues. It appears in the latter as item No. 1128 (p. 61) "*Lucerna Antiqua—L'Antique—Antique—Brasil—Helix ringens* Linn. *Very rare*".

In concluding these notes on Leach's types and figured specimens from the Cracherode collection, it may be of interest to say that although most of these were marked "Mus. Cracherode", only one had been transferred to the type collection. Thus eight hitherto unrecognized figured holotypes have been identified from this one source. This indicates the importance of occasionally re-examining old collections, which may have been taken very much for granted in the past. The recent discovery of the types of such well-known species as *Haliotis cracherodii* and *Padollus scalaris* will, it is hoped, encourage other curators who have early collections in their charge to re-examine them with similar results.

The appointment of the versatile John George Children to the Assistant Keepership of the Natural History Department, in succession to W. E. Leach, has already been referred to above, and in view of his translation of Lamarck's *Genera of Shells*, it was thought that a search among the Cracherode shells for some of his figured specimens would not go unrewarded. As a result, thirty specimens have so far been recognized as the originals of those figured in the work hereafter referred to as *Children's Lamarck*.

Before listing these surviving figured specimens, it would be as well to briefly review the effect that the completion of the mollusca volumes of Lamarck's *Histoire* had on the student and general collector of the period. Until that time the simple but inadequate Linnean system had held ascendancy over all others, at least in this country. Lamarck's work, although welcomed by the student, was greeted with some dismay by the general collector who had hoped to name all his specimens from it—a task made even more formidable by the greatly increased number of genera and species. That it was written in French, a language less fashionable than in the previous century, was another drawback to its immediate popularity to the general user. Hence the appearance of several "translations", compiled with the expressed intention of simplifying the new method for those, as one author put it "who may be disinclined to purchase an expensive book, or are altogether unacquainted with the language in which it is written . . . thus enabling them

to keep pace with modern science, by understanding *something* of the new arrangement". (Dubois, 1825, p. 8.)

There were at least five of these translations, three in England and two in America. The first (1822-24) was by J. G. Children; the second, called *An Epitome of Lamarck's Arrangement of Testacea* by Charles Dubois, first published in 1823, with further issues up to 1828 (the last with a few coloured plates); and the third, *An Illustrated Introduction to Lamarck's Conchology* by E. A. Crouch was printed in 1827, with fine lithographic plates by the author. Little more need be said of the last two English translations, which were only intended to serve "those who are not intimately acquainted with the science" (Crouch, p. iii). Nevertheless, both gave clear and concise descriptions of the genera, with examples of the species. Dubois apparently relied on his own judgment, but Crouch (being somewhat later in the field) had the advantage of consulting both Dubois and Children's work, and at least one of the latter's figures was copied and acknowledged (p. 2, pl. 1. fig. 7). This fact contradicts Kennard & Woodward's statement (1922, p. 48), that, although Crouch thanked Children for "polite attention" at the Museum, he did not appear to have consulted Children's work in connection with his own.

The fourth attempt to be noted was a neat little translation by A. A. Gould published in Boston in 1833, in which both Crouch and Children's works were noted, the latter erroneously attributed to Leach. Gould's book, which merely gave lists of species as examples of each genus, was followed by a *Manual of Conchology*, published in New York by Thomas Wyatt in 1838, which professed to give "a free translation of Lamarck's system, as simplified by de Blainville" and as usual was "divested of numerous technicalities" a process which excluded all authorities for the names used, many of which were additional to Lamarck's own lists of species. Wyatt's *Manual* was overlooked by Kennard & Woodward in their paper of 1922, but should have been included by virtue of the occasional use of the word "type". This appears first of all on the title page, which states that the book is illustrated by thirty-six plates "containing more than two hundred types, drawn from the natural shell" and further on (*Introduction*, p. v) "a type of almost every genus is given". On p. 111 *Clausilia laevis* is said to be "A regular type of this genus" from which it is clear that "type" meant no more to Wyatt than "example".

Children's Lamarck falls into a different category, and in recent years has become of considerable importance. Whereas Dubois, Crouch and Wyatt gave only examples of Lamarck's genera, Children apparently designated a type species for each of the shell-bearing genera in the *Histoire des Animaux sans Vertèbres*, a procedure not usual at the time of Lamarck's publication (1818-22). Thus only examples of each genus were given by Lamarck in his *Prodrome* and later works, and even these were frequently changed, sometimes for no apparent reason. Practical use of Children's designations in modern taxonomy needs special knowledge, to which an important contribution was made by Kennard, Salisbury & Woodward in a paper published in 1931, where the matter is fully discussed and the valid type species listed with critical notes.

The plates accompanying the parts of *Children's Lamarck* are of particular interest, for they were principally drawn from specimens in the British Museum by

the author's daughter Anna Children, later Mrs. Atkins. This is yet another example of filial devotion similar to that of Anna and Susanna Lister, who worked so hard on the figures for their father's *Historia Conchyliorum*, and again Lamarck's devoted daughter Cornélie, who acted as amanuensis during the years of his approaching and final blindness. According to Kennard & Woodward (1922, p. 48), Children's figures were the first to be used to illustrate Lamarck's genera, "and it is unfortunate that the figures were not better drawn". Miss Children's work, however, if not brilliant, is fairly competent, and had she been a more skilful artist versed in conchology, she might have tried to improve on the specimens selected by her father from the Museum collections. In fact she drew what she saw, and one must be grateful that certain blemishes in the shells have been faithfully repeated in the figures. One example only will illustrate the point—in the figure of *Bulla lignaria* (pl. VII, fig. 23) the upper part of the lip of the shell is seen to be chipped, exactly as in the Cracherode specimen (our pl. 23, fig. 8.), a blemish without which the figure would have resembled any number of *B. lignaria*, since Miss Children's figures were seldom drawn to scale.

While Kennard, Salisbury & Woodward (1931, p. 1) credit Children with an understanding of "type" in its modern sense, there seems little doubt that the latter's desire to figure an example of each Lamarckian genus (as far as possible from actual specimens), was governed by availability as well as suitability. Although Children usually regarded the first species cited by Lamarck as the author's type of the genus, in many instances the species figured in the translation was not the first on the list, probably because actual specimens were not available at the time. For example, Children names and figures *F. colus* (Linné) as the type of *Fusus*, adding in a footnote that this is "Lamarck's third species; his type is *F. colosseus*". According to Children's own manuscript catalogue this species was not then represented in the Museum collections.

Sometimes species may have been selected because specimens of the first listed species were too bulky to be carried home to Miss Children for figuring. Thus the moderately-sized *C. glauca* (Linné) was selected as the type of *Cassis*, in preference to the large and weighty *C. madagascariensis*, although the latter species appeared at the head of Lamarck's list, and was noted by Children to be his type. Similar replacements occur throughout the work, but are always mentioned by the author at the foot of the relevant page.

In order to show the method of arrangement in the extremely rare *Children's Lamarck*, one generic and specific description will be given, which also indicates the preference for a specimen readily available from the Cracherode collection. The example selected is the genus *Haliotis*, placed by Lamarck in the Macrostromiana, the seventh family in his Order Trachelipoda.

Shell auriform, usually flattened, spire very short, sometimes depressed, sublateral. Aperture very large, longitudinal, and, in the perfect shell, entire. Disc perforated with holes, disposed in a line parallel to, and near the left lip; the last hole incomplete, forming only a notch. No operculum.

Type. *Haliotis Iris** (Idem. *Gmel.*)

Shell rounded-oblong, very large, thin, rugose-plicate, prettily varied with green, red, and blue; spire sub-prominent, obtuse; left lip elevated. *New Zealand*. Pl. VIII. Fig. 158. 15 species.

The above generic and specific descriptions were a true translation of Lamarck's originals taken from the *Histoire* (Tome 6, Pt. II, p. 214, April 1822) and appeared in the fourth part of *Children's Lamarck* published in July 1823. It is of interest to note that the species selected by Children as his type of *Haliotis* formed a spectacular exhibit among the Cracherode shells in the public gallery, and was thus more readily available for illustration than a specimen of *H. midae* from the Sloane collection, much of which was probably still secreted in "drawers in the imposts round the room". A specimen was certainly there, purchased by Sloane with Petiver's shells, and now available with the rest of the recently recognized Sloane material.

From the above notes it would seem that all Children intended to do was to give a literal translation of Lamarck's generic descriptions, together with a figure and description of one species of each genus. Nowhere in his introductory text does he say anything to indicate that he understood the importance of designating type species, which only developed during the latter half of the nineteenth century. Indeed, in a PS. to his introductory text, the author unpretentiously notes that "we believe every genus is now illustrated with an appropriate figure" (p. 259). The present importance of Children's work, however, rests mainly on his use of the word "type" rather than "example". Whether intended or otherwise, his usage agrees with the now established rules regarding the designation of type species by subsequent authors (Article 30 (g) of the International Rules of Zoological Nomenclature).

Although Kennard, Salisbury & Woodward were mainly concerned with nomenclature, it is odd that they almost ignored the well-filled plates, merely remarking on the apparent poorness of the figures. Thus several misidentifications, such as *Ceratodes cornuarietis* for *Planorbis corneus*, and *Fissurella picta* for *F. nimbosa* passed unnoticed. Children's main object was to familiarize the general worker with Lamarck's new genera by means of illustrated examples, a task not attempted before, and none too easy with the limited material available at the time. The shells used for this purpose are of course no more than figured specimens, but as so many of them have recently come to light, it is of interest to record their existence in the National collection.

In the following list, the current generic and specific names of the figured Cracherode specimens are shown in bold face type on the left of the page, with the generic and specific names used by Children beneath, followed by references to the plates and figures in the various parts of the *Quarterly Journal of Science* (Q.J.S. in the list). In addition each species is referred to Kennard, Salisbury & Woodward's paper of 1931 (K. S. W. in the list), in which the errors and necessary alterations to the nomenclature since Children's day were noted in detail. As in the previous list, the Cracherode numbers and relevant catalogue entries are given, with brief additional notes where necessary.

* A rainbow 2d species.—Lamarck's type is *H. midae*.

*Cracherode Specimens Figured by J. G. Children when Selecting his Types for
Lamarck's Genera of Shells in 1823*

1. *Dentalium elephantinum* Linné

Genus : *Dentalium*. Type : *Dentalium elephantinum* (Idem Linn.).

Q.J.S., XIV, p. 69, pl. III, fig. 2. October 1822.

K. S. W., p. 4.

Crach. No. 222. *Dentalium Elephantinum* Linn. *The Elephant's Tusk.*

From China 10s. 6d.

2. *Ensis ceylonensis* (Leach)

Genus : *Solen*. Type : *Solen vagina* (Idem Linn.).

Q.J.S., XIV, p. 83, pl. IV, fig. 26 (Interior and exterior). October, 1822.

K. S. W., p. 5.

Crach. No. 183. *Solen Vagina* Linn. *Cross-striped Solen. From Tranquebar*

8s.

The specimen has already been described on p. 140 above, and appears to have been mistaken by Children for the European species, probably because the name *vagina* was written upon it by E. W. Gray in 1801 and taken to be correct.

3. *Donax scortum* Linné

Genus : *Donax*. Type : *Donax scortum* (Idem Linn.)

Q.J.S., XIV, p. 308, pl. V, figs. 49a, b. January 1823.

K. S. W., p. 8.

Crach. No. 45. *Donax Scortum. Sharp ridged Donax. From Tranquebar*

8s.

4. *Trapezium sowerbyi* Hidalgo

fig. 3b.

Genus : *Cypricardia*. Type : *Cypricardia guineaica* (Chama oblonga Linn.).

Q.J.S., XIV, p. 316, pl. VI, figs. 61, 61a. January 1823.

K. S. W., p. 10.

Crach. No. 35. *Chama oblonga Solander. Purple oblong Chama. From*

Pulo Condore £3 3s. od.

The history of the confusion between the shell now known as *Trapezium sowerbyi* and the Linnean *Chama oblonga* has been adequately recorded by Solem (1954, pp. 66-68), wherein he notes that a great deal of the confusion was caused by a figure published by G. B. Sowerby in 1822 (pl. 77) which he attributed to *Cypricardia oblonga* Linné in error. It is now evident that Sowerby figured the Cracherode specimen on which the name *Chama oblonga* had been inscribed by E. W. Gray, copied from the original Cracherode manuscript catalogue. The same shell was figured by Children as the type species of *Cypricardia*, with Lamarck's specific name *guineaica*, now recognized by Solem as a synonym of the true *T. oblongum* (Linné). The Cracherode specimen appears again in Lovell Reeve's *Conchologia Systematica* (1842, pl. LXXX) for which Sowerby lent many of the plates used in the *Genera of Recent and Fossil Shells* (1820-25).

5. *Cucullaea concamera* (Bruguière)

Genus : *Cucullaea*. Type : *Cucullaea auriculifera* (Arca cucullus Gmel.).

Q.J.S., XIV, p. 318, pl. VI, figs. 64, 64a. January 1823.

K. S. W., p. 11

Crach. No. 9. *Arca labiata Soland. Lipped or Valved Ark. From Nico-*
bar Isles

£4 4s. od.

K. S. W. state that the type of *Cucullaea* by tautonymy is *C. cucullus* (Gmelin) 1791, a synonym of the earlier *concamera* Bruguière 1789.

6. *Prisodon syrmatophora* (Gmelin)

Genus : *Hyria*. Type : *Hyria avicularis* (*Mya syrmatophora* ? Gmel.).

Q.J.S., XV, p. 25, pl. II, figs. 70, 70a. April 1823.

K. S. W., p. 12.

Crach. No. 67. *Mya* . . . *The Eared Mya. From Brazil. One Valve*
uncoated and polished

£3 3s. od

There seems little doubt that Children's figured specimen is the *Mya syrmatophora* described and figured in the *Zoophylacium* of Gronovius in 1778, quoted by Gmelin (p. 3222) and apparently the var. B (*testa transversim abbreviata*) of *Hyria avicularis* noted by Lamarck in the *Histoire*. The Cracherode shell certainly has the name *Mya syrmatophora* clearly written upon one of the valves by E. W. Gray in 1801, some years before Lamarck's description of his more elongate species; furthermore there were only two species of *Hyria* in the Museum collection in 1822. *H. avicularis* (catalogued with *syrmatophora* as a synonym) and *H. corrugata*, Lamarck's second species, both Cracherode shells.

7. *Crenatula folium* Gray

Pl. 24, fig. 7.

Genus : *Crenatula*. Type : *Crenatula modiolaris*.

Q.J.S., XV, p. 35, pl. II, figs. 81, 81a. April 1823.

K. S. W., p. 13.

Crach. No. 93. *Ostrea* . . . (*Vulsella folium*) *White Leaf elegantly marked*
Vulsella, faintly rayed with violet. From ——. Unique.

£8 8s. od.

This is one of the highly-priced Calonne shells and will be referred to more fully later. According to K. S. W. (p. 13) the name used by Children cannot stand as the type species of *Crenatula* as it was not included in the genus when founded by Lamarck in 1802, and preference is therefore given to the *C. mytiloides* selected by Gray in 1847 (p. 200). Once again this was probably the only *Crenatula* available to Children for figuring, Lamarck's *modiolaris* seeming nearest to it. Gray evidently disagreed with Children's determination and fully described the Calonne shell as a new species in 1825.

8. *Pteria chinensis* (Leach)

Genus : *Avicula*. Type : *Avicula crocea*.

Q.J.S., XV, p. 37, pl. II, figs. 84, 84a. April 1823.

K. S. W., p. 14.

Crach. No. 84. *Mytilus* . . . *Brown striped yellow Swallow Pearl Shell.*
From China

10s. 6d.

This is another example of the frequent disregard of existing names by some early nineteenth century authors, for Children makes no mention whatever of Leach's name given to this actual specimen a few years previously, and well-figured in the *Zoological Miscellany*—even Lamarck makes it a synonym of his own *Avicula crocea* first published in the *Histoire* in 1819 (6, (1), 148).

9. *Pinctada margaritifera* (Linné)

Genus : *Meleagrina*. Type : *Meleagrina margaritifera* (*Mytilus margaritifera* Linn.).

Q.J.S., XV, p. 37, pl. III, figs. 85, 85a. April 1823.

K. S. W., p. 14.

Crach. No. 80. *Mytilus margariferus* Linn. (*Margaritifera nigra*) *Black*
Mother of Pearl Shell. From Otaheite

£1 1s. od.

The shell figured was probably brought from Tahiti by one of Capt. Cook's men, and as can be seen from the figures the shell margins have been ground smooth and pierced for use as an ornament.

10. *Pedum spondyloideum* (Gmelin)

Genus : *Pedum*. Type : *Pedum spondyloideum* (*Ostrea spondyloideum* Gmel.).

Q.J.S., XV, p. 38, pl. III, figs. 86, 86a. April 1823.

K. S. W., p. 14.

Crach. No. 94. *Ostrea ligo*, *The Spade or Hoe Oyster*. From ——. *Unique*. £10 10s. od.

This is an original Calonne specimen, No. 998 in the *Museum Calonnianum* of 1797, where it was described by Humphrey as *Ostrea ligo*. An obvious fault in the upper valve of the shell, repeated in the engraving, leaves no doubt that it is the original of Children's figure.

11. *Placenta sella* (Gmelin)

Genus : *Placuna*. Type : *Placuna sella* (*Anomia sella* Linn.).

Q.J.S., XV, p. 45, pl. III, figs. 96, 96a, b. April 1823.

K. S. W., p. 16.

Crach. No. 86. *Ostrea* . . . (*Placuna Ehippium* Soland), *Saddle Shell*.

From Tranquebar £3 3s. od.

12. *Chiton tuberculatus* Linné

Genus : *Chiton*. Type : *Chiton squamosus* (Idem Linn.).

Q.J.S., XV, p. 224, pl. VII, fig. 111. July 1823.

K. S. W., p. 17.

Crach. No. 1. (Multivalves). *Chiton* . . . *Shagreen Chiton*. From the
West Indies

8s.

As might have been expected in the light of recent knowledge, the Cracherode specimen figured by Children is actually *C. tuberculatus* Linné, which was so frequently mistaken for the Linnean *C. squamosus* by most authors of the nineteenth century, a circumstance fully discussed by Dodge (1952, p. 19, *et seq.*). This is a good example of the artist's faithful reproduction of the original specimen, for the girdle of the rather small Cracherode shell is dried and shrivelled exactly as shown in the figure—a blemish that a more gifted artist might have been tempted to make good.

13. *Scutus antipodes* Montfort

Pl. 26, fig. 15j.

Genus : *Parmaphorus*. Type : *Parmaphorus australis*.

Q.J.S., XV, p. 227, pl. VII, fig. 115. July 1823.

K. S. W., p. 18.

Crach. No. 365. *Patella* . . . *The White Duck's Bill Limpet*. From New
South Wales

£1 1s. od.

14. *Fissurella picta* (Gmelin)

Genus : *Fissurella*. Type : *Fissurella nimbosa* (*Patella nimbosa* Linn.).

Q.J.S., XV, 228, pl. VII, fig. 117. July 1823.

K. S. W., p. 18.

Crach. No. 382. *Patella* . . . *The Great Radiated Mask*. From Falkland
Island

15s.

The Cracherode specimen selected for illustration is not *F. nimbosa* Lamarck, but *F. picta* (Gmelin), the first species on Lamarck's list and noted by Children to be his type. *F. nimbosa* certainly has dark radiations, but the shell is more conical and there are other differences in the apical opening and shell margin.

15. *Scaphander lignarius* (Linné)

Genus : *Bulla*. Type : *Bulla lignaria* (Idem Linn.).

Q.J.S., XV, p. 232, pl. VII, fig. 123. July 1823.

K. S. W., p. 19.

Crach. No. 77. *Bulla Lignaria* Linn. *Wood-like Bulla*, with its gizzard.
From Weymouth. See Transactions of the Linnean Society,

Vol. 2 £1 1s. od.

It is of particular interest to record the presence of *S. lignarius* in the Cracherode collection, for a reference to Humphrey's paper of 1794 describing the gizzard of *B. lignaria* was given in the account of the Banks collection (Wilkins, 1955, p. 116), quoting the above entry in the Cracherode catalogue, showing the shell and gizzard to be a regular item of Humphrey's stock-in-trade. These two specimens were mounted on the same tablet by Edgar Smith, and were exhibited with the British collection in the old shell gallery for many years.

16. *Anostoma octodentatum* Fischer de Waldheim

Pl 25, fig. 10.

Genus : *Anostoma*. Type : *Anostoma depressum* (sic) (*Helix ringens* Linn.).

Q.J.S., XV, p. 238-9, pl. VIII, fig. 132. July 1823.

K. S. W., p. 20.

Crach. No. 269. *Helix* (*Lucerna antiqua*) *Antique Lamp*. From Brazil . . . £8 8s. od.

An account of this species has already appeared above among Leach's figured specimens (p. 145), but it should perhaps be mentioned that the Cracherode shell was probably the only one available to Children in 1823, and best suited to Lamarck's description of his *A. depressa*, although not actually that species. Lamarck gives the Linnean *Helix ringens* as a synonym of *A. depressa*, but as already noted the former is now known to be synonymous with the much smaller *A. globulosa* Lamarck, the second of the two species cited in the *Histoire*, and of which a good figure is given by Crouch (1827, pl. 14, fig. 18).

17. *Ceratodes cornuarietis* (Linné)

Genus : *Planorbis*. Type : *Planorbis corneus* (*Helix cornea* Linn.).

Q.J.S., XV, p. 242, pl. VII, fig. 141. July 1823.

K. S. W., p. 22

Crach. No. 275. *Helix Cornu-Arietis* Linn. *Banded Ram's Horn Land*

Snail. From the West Indies 15s.

There seems to have been some confusion with this species, firstly by Lamarck, who cited this now well-known Ampullarid as the first species in the genus *Planorbis*, and secondly by Children, who after remarking in a footnote that *P. corneus* is "Lamarck's second species. His type, *P. cornu arietis*, Mr. Sowerby considers as an Ampullaria", proceeded to give an unmistakable figure of the West Indian shell. Dubois (1825, p. 190) follows Lamarck in citing *cornuarietis* as his example of *Planorbis* without comment, but Crouch (1827, p. 29, pl. 15, fig. 10) gets the matter right by citing and figuring the true *Planorbis corneus* (Linné). Even as early as 1686 (Lib. II, f. 40) Martin Lister included *C. cornuarietis* among the exotic freshwater snails (*Cochleis fluviatilibus compressis*), giving an excellent figure of a specimen still in existence in the Sloane collection.

18. *Nerita textilis* (Gmelin)

Genus : *Nerita*. Type : *Nerita exuvia* (Idem Linn.).

Q.J.S., XV, p. 247, pl. VIII, fig. 152. July 1823.

K. S. W., p. 24.

Crach. No. 341. *Nerita* . . . *Great Pied and Fluted Nerite*. From Madagascar 5s.

Children's figure is clearly the *N. textilis* Gmelin selected in error for the smaller and more closely ribbed *exuvia* Linné. Lamarck's references to the figures of Chemnitz for both these species are in order, and it appears from this and other misidentifications that Children was not always fully conversant with his subject.

19. *Haliotis iris* Gmelin (Ex. Martyn)

Genus : *Haliotis*. Type : *Haliotis iris* (Idem Gmel.).

Q.J.S., XV, p. 158, pl. VIII, fig. 158. July 1823.

K. S. W., p. 25.

Crach. No. 231. *Haliotis Iris*. *The Iris Ear Shell in its native state*. From New Zealand £1 1s. od.

This species has already been mentioned as an example of Children's choice of available rather than suitable species for illustration, but this was particularly unfortunate as it was not in the genus when founded by Linné, and cannot stand as the type. (K. S. W., p. 25).

20. *Solarium maximum* (Philippi)

Genus : *Solarium*. Type : *Solarium perspectivum* (Trochus perspectivus Linn.).

Q.J.S., XV, p. 252, pl. VIII, fig. 164. July 1823.

K. S. W., p. 27.

Crach. No. 424. Trochus perspectivus Linn. From China. A very large

one of the species £1 1s. od.

This Cracherode shell is included among the figured specimens with some reservation, Children's figure is not sufficiently clear to show the slight differences now separating the species of the genus *Solarium*. It is a fine large shell and probably the best available at the time, thus there is every reason to accept it as the original, particularly as *S. maximum* was not separated from the *perspectivum* complex until 1848.

21. *Astraea imperialis* (Gmelin)

Genus : Trochus. Type : *Trochus imperialis* (Idem Gmel.).

Q.J.S., XV, p. 253, pl. VIII, figs. 166, 166a. July 1823.

K. S. W., p. 27.

Crach. No. 396. Solaris Imperialis. The Imperial Sun Shell. From New

Zealand. In its young state £5 5s. od.

Naturally this fine New Zealand species was not known to Linné when he founded the genus *Trochus* in 1758, and as pointed out by K. S. W. (p. 27) Children's selection of Lamarck's first species must give way to the *T. maculatus* designated by Iredale (1912, p. 225). The Imperial Sun Shell has been a "collector's piece" since specimens were first brought to Europe by Captain Cook, and later figured by Martyn, Chemnitz, Donovan and others, the last named describing a specimen in the Leverian Museum with almost religious fervour (1823, pl. XI). According to Dell (1955, p. 16) this shell is now known as the Circular Saw Shell, a harsh and unpleasant name that almost demands a measure of priority in vernacular as well as scientific names. In a recent note on this species (Wilkins, 1954), the earlier specific name *heliotropium* Martyn 1784, so regularly used by Suter, Powell and other New Zealand authors was given preference, but as a petition to validate this and some more of Martyn's names is now before the International Commission they are only used as synonyms in this present paper.

22. *Vasum turbinellum* (Linné)

Genus : Turbinella. Type : *Turbinella cornigera* (Voluta turbinellus Linn.).

Q.J.S., XV, p. 257, pl. VIII, fig. 175. July 1823.

K. S. W., p. 28.

Crach. No. 315. Murex Diabolus (Voluta turbinellus Linn.) The Devil

Murex. From Madagascar 8s. 6d.

This spiny group of shells, formerly included in *Turbinella* is now placed in the genus *Vasum* Röding by Thiele and other authors, while *Xancus* Röding (noted by K. S. W. as preceding Lamarck's *Turbinella*) is reserved for the smoother group of Chank Shells, of which *Xancus pyrum* (Linné) is the type.

23. *Fusus colus* (Linné)

Genus : Fusus. Type : *Fusus colus* (Murex colus Linn.).

Q.J.S., XV, p. 258, pl. VIII, fig. 178. July 1823.

K. S. W., p. 29.

Crach. No. 324. Murex colus Linn. Slender Crane. From China

£1 11s. 6d.

24. *Struthiolaria stramineus* (Gmelin)

Genus : *Struthiolaria*. Type : *Struthiolaria nodulosa* (Murex stramineus Gmel.).

Q.J.S., XVI, p. 49, pl. V, fig. 180. October 1823.

K. S. W., p. 29.

Crach. No. 330. Murex . . . *Knotted Murex*. From South Seas . . . £2 2s. od.

S. nodulosa Lamarck is a synonym of *stramineus* Gmelin 1791, which therefore becomes the type species.

25. *Tibia fusus* (Linné)

Genus : *Rostellaria*. Type : *Rostellaria curvirostris* (Strombus fusus Linn.).

Q.J.S., XVI, p. 52, pl. V, fig. 184. October 1823.

K. S. W., p. 30.

Crach. No. 402. Strombus Fusus, Linn. Great or Bellied Spindle in three different stages of growth. From Arabia Felix . . . £2 12s. 6d.

The figured specimen is an immature shell, probably the second growth stage, without the tooth-like projections on the outer lip of the adult particularly mentioned by Lamarck in his description. One can only conclude that Children could not locate the third specimen in Cracherode's series, or even the fully-grown shell now known to have been in the Sloane collection.

26. *Strombus latissimus* Linné

Genus : *Strombus*. Type : *Strombus latissimus* (Idem. Linn.).

Q.J.S., XVI, p. 53, pl. V, fig. 186. October 1823.

K. S. W., 31.

Crach. No. 403. Strombus latissimus Linn. (Alatus latissimus) Broad Winged Alatus. From Amboyna . . . £8 8s. od.

Children appears to have chosen this species mainly for its attractive form and markings, and also because there were only juvenile specimens of Lamarck's first species (*S. gigas*) available at the time.

27. *Phalium glaucum* (Linné)

Genus : *Cassis*. Type : *Cassis glauca* (Buccinum glaucum Linn.).

Q.J.S., XVI, p. 55, pl. v, fig. 188. October 1823.

K. S. W., p. 31.

Crach. No. 51. Buccinum Bezoar (Cassida bezoar) Bezoar Helmet. From Ceylon . . . 15s.

It is of interest to note the name *bezoar* in the Cracherode catalogue entry, for it was used by Humphrey in the Calonne catalogue in 1797, in French and English (p. 19, No. 310—*Le Bézoire*—*Bezoar*—*Buccinum glaucum* Linn.), the colour of the shell having some fancied resemblance to the greyish bezoar stones voided by certain mammals, and so greatly in demand for use in early medicine as an antidote to poison. Lamarck also uses the term *Casque Bezoar* in the *Histoire*.

28. *Harpa major* Röding

Genus : *Harpa*. Type : *Harpa ventricosa* (Buccinum harpa Linn.).

Q.J.S., XVI, p. 58, pl. V, fig. 193. October 1823.

K. S. W., p. 32.

Crach. No. 34. Buccinum Harpa Linn. (B. Testudo Soland) (Harpa Testudo). The Tortoiseshell Harp. From Madagascar . . . 15s.

The Linnean *Buccinum harpa*, as noted by Lamarck, was a composite species that included practically all the Harp Shells, several distinct species being regarded only as varieties by

Bruguère, Dillwyn and others. Hanley (1855, p. 251) considered *H. nobilis* to be the typical form, but Melvill (1916, p. 26), while appreciating Hanley's decision suggested that as *H. ventricosa* was the most frequent species it might be considered the best exponent of the Linnean *B. harpa* and of the genus *Harpa*. Melvill's paper showed that Lamarck's genus *Harpa* and several of his species were predated by Röding in 1798. Thus the well-established *H. ventricosa* and *H. articularis* were to be known as *major* and *dauidis* respectively, but it is noticed that Thiele (1931, p. 344) still retains the *H. ventricosa* Lamarck and Nicklés (1950, p. 113) *H. rosea* Lamarck and not the *H. doris* Röding.

In 1945 Winckworth dealt ably with the type species of the Boltenian genera, selecting *H. nobilis* Gmelin (*pars*) as the type of the genus *Harpa* (p. 140), to which Children's selection must presumably give way. This was after all only dictated by availability, for Lamarck's type, the rare *H. imperialis* Lk., was not represented in the Museum collection until some years later. The figured Cracherode shell is easily recognized by a definite fault in the shell, faithfully reproduced by the artist.

29. *Tonna perdix* (Linné)

Genus : *Dolium*. Type : *Dolium perdix* (*Buccinum perdix* Linn.).

Q.J.S., XVI, p. 59, pl. V, fig. 194. October 1823.

K. S. W., p. 32.

Crach. No. 30. *Buccinum Perdix* Linn. (*Dolium perdix*). *The Partridge*

Tun. From China £1 1s. 0d.

K. S. W. (p. 32) and Children himself stated that the *Buccinum galea* Linné is the type species of *Dolium*, the former from their fuller knowledge and the latter because it was Lamarck's first species in the *Histoire*, but this again was not available to Children and in any case would have made a less attractive or distinctive figure than the one chosen for illustration.

30. *Terebellum terebellum* (Linné)

Genus : *Terebellum*. Type : *Terebellum subulatum* (*Bulla terebellum* Linn.).

Q.J.S., XVI, p. 67, pl. V, fig. 205. October 1823.

K. S. W., p. 34.

Crach. No. 516. *Voluta* . . . (*Bulla terebellum* Linn.). *The Truncated*

Olive. From New Caledonia 10s. 6d.

The Linnean *B. terebellum* is the type species by tautonomy, Lamarck having changed the name to *subulatum* in the *Histoire*, although he had used the former in the *Prodrome* in 1799.

The above item completes the list of Cracherode shells so far recognized as those figured by Children in 1823, and as previously stated there are others among the Sloane shells, notably *Q.J.S.*, XV, pl. II, figs. 72 & 80, pl. III, fig. 105, pl. VII, fig. 112. There is every indication that further efforts would reveal a much larger series of figured specimens, including material from the smaller donations recorded in Children's manuscript catalogue of the mollusca collections.

The next period to consider is from 1824, when J. E. Gray started to publish his papers largely based on Museum material, to 1828, when William Wood produced the *Supplement* to the *Index Textaceologicus*, in which many figures of new species appeared for the first time. Before proceeding to a discussion of these, it may be of use to add a brief note on the work of the latter author, said by Swainson (1840, p. 380) to be "now the most learned bookseller in London for works connected with natural history".

Born in 1774, William Wood eventually entered the medical profession and practised in London until 1815, when he changed to bookselling and publishing.

carrying on his business from No. 428, Strand, London. He was elected Fellow of the Linnean Society in 1798 and Fellow of the Royal Society in 1812. His works were of a semi-popular nature, dealing with general zoology, conchology and entomology, but the strict adherence to the Linnean system caused them to be less useful than they really deserved. Wood's first conchological publication was the *General Conchology* of 1815 (reissued in 1835 with new title page) of which only the first volume appeared, the second being abandoned from lack of public support. This was followed by the first edition of the *Index Testaceologicus* in 1818, a second edition very much enlarged and improved in 1825, and finally a reprint plus *Supplement* in 1828.

Swainson (1840, p. 380) reports on Wood's *Index* as follows: "These figures are executed with great neatness, and often with beauty. The arrangement, however, is that of Linnaeus, and the synonyms often short and incorrect. Mr. Wood, Jun., by whom the plates were executed, has made every endeavour to procure original specimens for deliniation; but when the species could not be found in London cabinets, he has very properly copied the original figure, quoted by Linnaeus, or by his followers. A supplement has since been added". Swainson gives the date of the first edition (1818), in which the figures are anything but neat, and mostly lack beauty, all in fact having a decidedly amateurish appearance. A minute "W. W." engraved at the base of the plates indicates that William Wood had rather unsuccessfully endeavoured to become artist as well as author and publisher. The plates in the later enlarged editions of 1825 and 1828 (the first six of which were engraved by J. Sowerby and the rest by Wood, Jun.) are of a distinctly higher standard, and it seems therefore that Swainson was reporting on the 1825 edition rather than the 1818 as stated. The figures are particularly good in the *Supplement*, where they have proved to be faithful reproductions by comparison with the original specimens.

Used by itself this addition to the *Index* is very misleading, and has frequently led to names being credited to Wood instead of Gray and vice versa. It was arranged on the same Linnean plan as the larger work, which was principally a compilation, the names appearing under the column headed "*Linnean names*". In the *Supplement* most of the names were, as the author says, wholly unknown to Linné, "yet as the arrangement is Linnean, the head could not well be dispensed with without injury to the body". It does not seem to have occurred to him to place the authorities after the names, if other than Linnean. Wood does, however, give a few indications under the heading "*Synon. & Ref.*" but these refer principally to the various collections from which the shells were figured, the names attached to them being adopted. Most of them, he says, were from specimens in the British Museum, so that one gets a mixture of names which had to be sorted out by reference to a list of Lamarckian names adapted to the *Index* at the end of the book, but even then there were naturally a number unknown to Lamarck (indicated in italics) for which no proper authority was given.

Much of the confusion created by Wood's *Supplement* was cleared up by Hanley in his 1856 edition of the *Index Testaceologicus*, in which fairly full references to the original authors were given, but even so names were attributed to the owners of

specimens labelled in manuscript, rather than to Wood as first publisher—*Mactra recurva* for instance (p. 201), is attributed to Gray presumably because it was taken from a manuscript name on a Museum tablet. Many of Mawe's manuscript names are treated in the same way by Hanley, usually referred to as "Mawe. I. T", and thus it is that a number of names improperly attributed to Mawe are to be found in Carpenter's *Report* of 1863 (p. 524) immediately following his eulogy on the excellence of Hanley's edition of the *Index*.

The difficulties encountered in the use of Wood's *Supplement* were of course greatly simplified by the advent of Sherborn's indispensable *Index Animalium* (1801-50), but caution is still necessary when dealing with the combined efforts of Gray and Wood.

J. E. Gray's early monograph on *Cypraea* (1824-28), has already been quoted and there is no doubt that Cracherode shells were included among those referred to "Mus. Brit.", but as several collections were often quoted (Mus. Brit., Sowb., Nost., etc.) it is not easy to select individuals, except when "Mus. Brit." occurs alone, as in the case of the *Cypraea aurora*, or Orange Cowry (*Zool. J.*, p. 150) where it is stated that "This shell is considered a very great rarity without a hole in the side; this hole is formed by the natives of the Friendly Islands, where it constitutes one of the ornaments worn by their chiefs". The only Orange Cowry then available was the Cracherode specimen (No. 204) from Otaheite, which certainly has a hole in the side and shows evidence of considerable wear; it was purchased by Cracherode for eight guineas.

A most important paper was published by J. E. Gray in the *Annals of Philosophy* for February 1825, with the following title and superscription:

A List and Description of some Species of Shells not taken Notice of by Lamarck.

By John Edward Gray Esq. M.G.S.

(To the Editors of the Annals of Philosophy)

British Museum. Jan. 10, 1825.

GENTLEMEN,

In the following list I have referred several species, which have not been taken notice of by Lamarck, to his genera, and have described some new ones that are contained in the collection in the British Museum, where most of the species are exhibited with the names, here adopted, attached.

Your obedient servant,
J. E. Gray.

Several Cracherode specimens were described as new species in this early paper, namely *Lucina Childrenae*, *Cytherea crassa*, *C. pinguis*, *C. Solanderii*, *C. aurisiaca* and *Crenatula folium*. Only three of these specimens have so far been located—*L. Childrenae*, *C. Solanderii* and *Crenatula folium*. *Cytherea pinguis* and *aurisiaca* are certainly represented in Gray's own collection, and were it not for the rather large numbers usually placed on the shells by E. W. Gray, it might have been possible for the Cracherode shells to have become mixed with J. E. Gray's own specimens, but no trace of any numbers can be seen.

The three existing Cracherode type specimens described by Gray in 1825 are listed below :

1. *Miltha childrenae* (Gray)

Lectotype. Pl. 24, fig. 6.

Crach. No. 216. Tellina (Acerata inaequalvalvis) *White Acerata with unequal valves, and a gilded extender.* From Brazil. Unique . £5 5s. 5d

There is no doubt that this is the original specimen, the "gilded extender" referred to being merely a rim of yellowish periostracum still adhering to the outer margin of the under valve of the shell, clearly shown in Pl. 24, fig. 6 (natural size).

First Description

J. E. Gray, *Zoological Journal*, 1, p. 221, June 1824.

The first mention of this species appeared in rather an odd manner in the chapter on reversed shells in *Mr. Gray's Conchological Observations* printed in the above journal, where the author mentions two specimens of a new *Lucina* in the Tankerville collection, adding a footnote saying "I call this new shell *Lucina Childrinae* [sic], it is distinguished from all other *Lucinae* by being unequivalved, and approaching nearly in form to the *Cytherea exuleta*; there is another specimen in the British Museum".

This footnote can hardly be called a good description, although actual specimens were referred to, but adequate search in available catalogues and among existing collections of known purchasers of the Tankerville shells (i.e. Broderip, Lincoln, Leathes, Goodall and the British Museum) have failed to reveal the whereabouts of the two specimens first mentioned and it therefore seems advisable to rely on Gray's second and proper description applied to the Cracherode shell which certainly formed part of his original material.

It is pleasant to pause here to note that even at this early date J. E. Gray had already developed his propensity for naming shells after the ladies of his acquaintance, such names as *Georginae*, *Sophae*, and *Emmae* falling easily from his pen, and there is no doubt that he intended the name of this new species as a compliment to the daughter of his friend, a kindred spirit, who was said by the author to have "a well-selected cabinet" of her own (*Zool. J.*, 1, p. 144).

Second Description

J. E. Gray, *Annals of Philosophy*, 9, p. 136, February 1825.

"*Lucina Childrenae*. Testa suborbiculata inaequalvibus alba subantiquata; tenuissime radiata substriata: long. 3. unc. Brazil, *Humphreys* nob."—*Zool. J.* 1, p. 221.

Reference to the above description was made in the Tankerville catalogue, which was apparently published shortly afterwards, but with the date of the *Annals of Philosophy* shown as 1824, and the masculine termination to the name.

G. B. Sowerby, *Tankerville Catalogue*, p. 11, No. 206, 1825.

Lucina Childreni (a.b.) Gray, in *Annals of Philosophy* (1824) 2 specimens: one being the reverse of the other."

According to a priced copy of the catalogue in the British Museum (Natural History), once the property of J. E. Gray, and said by him to be a copy of the one kept in the room for the use of intending purchasers, these two shells were priced by Sowerby at ten guineas the pair, the same *pro rata* price paid by Cracherode many years earlier. No figure of Gray's new species was published until January 1826, when G. B. Sowerby included the interior of a single valve in Part XXVII (*Lucina*) of the *Genera of Recent and Fossil Shells*. It is quite likely, although the origin of the specimen was not mentioned, that it was a valve of one of the Tankerville shells, for it is known that Sowerby took the opportunity to note and figure many of the novelties in that collection for future use, while preparing the sale catalogue early in 1825.

The species was figured for the second time by Wood in the *Supplement* of 1828 (*Tellina*. p. 3, pl. 1, fig. 1), again spelt *Childreni* and referred to the British Museum, with the original locality "Brazil".

Since Humphrey's day this locality had always been accepted as correct for the species, then as now a fairly rare shell. P. P. Carpenter, however, threw doubt on the locality "Brazil" when noting American West Coast shells in the Tankerville catalogue in his *Report* of 1863, where he makes the following categorical statements: (1) under the Tankerville specimen No. 206:

"*Lucina Childreni* (described by Gray in *Ann. Phil.* 1824; v, also *Zool. J.* vol. i, 1825, pp. 221-2.

"There is no authority for the statement that it came from Brazil. The Br. Mus. specimens are from 'Mus. Cracherode', and are probably West Coast. The only known locality is Cape St. Lucas."

And again (2) on p. 620, No. 113:

"*Miltha Childreni* (A few fresh specimens correct the habitat 'Brazil', previously assigned to this extremely rare and remarkable shell, which appears to be a gigantic *Felania*)."

These statements led Dall to record the species as a native of the Gulf of California and not Brazil (1901, p. 812), and it was not until four years later that he was enabled to correct his statement, having received a specimen of *Miltha childrenae* from Pernambuco, collected by Carvalho "thus confirming Gray's original locality" (1905, p. 111), a locality which originated from the Cracherode collection via George Humphrey in the 1790's.

As noted by Dall, Carpenter's record of Cape San Lucas was a clear case of misidentification, for a comparison between specimens from that place named by Carpenter, and the one from Pernambuco proved them to be "two very similar but distinct species", the rarity of the shells being responsible for the delay in discovering the mistake. To the Cape San Lucas shell Dall gave the specific name *xantusi*, in honour of its discoverer, John Xantus, a Hungarian employee of the United States Government. He spent eighteen months on Cape San Lucas as a tidal observer from 1860 to 1861, taking the opportunity while there to collect specimens of all groups of marine animals for the Smithsonian Institution, thus adding zest to "his solitary and what would otherwise have been monotonous life" (Carpenter, 1863, p. 617). Steinbeck & Ricketts, however (1941, p. 61), make it fairly clear that when not assiduously collecting and watching the tides, the life of Xantus was far more colourful and less monotonous than the good Dr. Carpenter would have imagined, and that there is substantial living evidence to prove his sojourn on the Cape to be something more than a legend to the present inhabitants.

Xantus made a real contribution to knowledge of the marine fauna of the Gulf of California, adding at least sixty new molluscan species to those already in the great Mazatlan collections gathered together by Frederick Reigen, an enthusiastic Belgian who filled his house with decomposing molluscs to such an extent that the neighbours had to call in the police! (Carpenter, 1863, p. 540). The same author tells us (p. 617) that "During the period Mr. Xantus was out of employment owing to the derangements of the war, a portion of the duplicates were offered for sale, and will be found in some of the principal collections." It was probably at this time that the single Cape San Lucas specimen of *M. xantusi* in the Museum collection was obtained by Hugh Cuming, duly labelled "California" with Cape St. Lucas written inside the shell in pencil.

The sub-genus *Miltha* was erected by H. & A. Adams for the reception of *M. childrenae* in 1857 (2, p. 468), later authors, including Thiele (1935, p. 866) giving it full generic rank.

2. *Sunetta solanderii* (Gray)

Holotype.

J. E. Gray, *Annals of Philosophy*, 9, p. 137, 1825 (*Cytherea*).

Crach. No. 170. Pectunculus . . . (Venus Hians Soland). *Thick Lettered*

Clam. From China 10s. 6d.

There is little need to repeat Gray's original description, except to note that he recorded the use of the name *hians* by Solander and Humphreys in manuscript. The shell must at some time

have been labelled with this earlier name, for so it appears in Wood's *Supplement* (pl. 2, *Venus*, fig. 11) in 1828, obviously drawn from the Cracherode type specimen described by Gray.

3. *Crenatula folium* Gray

Holotype. Pl. 24, fig. 7.

J. E. Gray, *Annals of Philosophy*, 9, p. 139, 1825.

In this description Gray tentatively suggested a new genus *Dalacia* for his *Crenatula folium*, apparently based on the slightly different position of the umboes of the shells. The original descriptions of genus and species were as follows: "CRENATULA. This genus may be divided into two sections, which may perhaps hereafter be considered as genera by the same character as separates *Mytilus* from *Modiola*, 1. *Testa quadrata umbonibus anterioribus*, which includes the species or rather varieties mentioned by Lamarck. 2. *Testa ovata umbonibus sub anterioribus* (*Dalacia*) containing the following: *Cre. folium*. *Testa albida radiata compressa; latere antico rotundato, postico alata.* Brand's *Journal* XV, t. 2, f. 81, figura pulcherrima. *Vulsella folium.* *Humph. Mus. Cracherode.*"

This Cracherode specimen (No. 93), already referred to among those figured by Children in 1823 (No. 7), originated from the Calonne collection, having been purchased from George Humphrey between 1797 and 1799 for the sum of eight guineas. It was described by Humphrey on page 44 of the *Museum Calonnianum* (No. 821), under the genus *Vulsella* in 1797.

The shell has naturally become faded and somewhat damaged during the years, the faint rays of violet only now being discernible on the lower valve of the shell, where it was attached to the Museum tablet. Considering the friable nature of even fresh specimens of any *Crenatula*, the Cracherode shell is in tolerably good condition. It was figured for the second time by Wood in 1828 as *Mytilus folium* (pl. 2, *Mytilus*, fig. 4) "Locality unknown." Reeve figured the species from excellent specimens in the Cuming collection (1858, *Crenatula*, sp. 5a, b) as a new species, *C. flammea*, but this is certainly the *C. folium* Gray, having the same white, hair-like radial markings not to be seen in any other species of *Crenatula* so far examined. Reeve figured a shell he called *C. folium* (pl. 11, sp. 7) but this was only a pale form of *C. picta* (Gmelin) from the Red Sea, shown correctly in the previous figure on the same plate.

Reeve's figures of *C. flammea*, from New Caledonia, show the true colour of *C. folium* Gray, and his locality, now adopted for the type, is further confirmed by specimens so marked in the J. J. MacAndrew collection. This locality is particularly acceptable as Humphrey is known to have had a supply of shells from New Caledonia, including several species of very characteristic *Placostylus*.

Gray included his genus *Dalacia* (so uncertainly proposed in 1825) in his *List of Genera and Types* in 1847, with *D. folium* as the type species (p. 200, No. 375), but few authors appear to have bothered about it since, except to quote it as a synonym of *Crenatula* (H. & A. Adams, 1857, p. 528).

Cracherode Specimens Figured by William Wood in the Supplement to the Index Testaceologicus 1828

The following series of type and figured specimens are of species said to be found on the Museum tablets, and not included in the 1825 edition of the *Index*. A few have already appeared in previous lists, but these must of necessity be mentioned again to indicate the further use of the Cracherode shells.

1. *Mactra striatula* Linné

Mactra subplicata Lamarck. *I. T. Supp.*, p. 4, pl. 1, *Mactra*, fig. 6. Tranquebar.

Crach. No. 58. *Mactra striatula* Linn. *Half striated Mactra.* From Tranquebar

108. 6d.

2. *Mactra alata* Spengler

Mactra alata, I. T. Supp., p. 4, pl. 1, *Mactra*, fig. 7. Locality unknown.

Crach. No. 221. *Trigonella fimbriata*, white fringed *Trigonella*. From
Brazil 10s. 6d.

It appears that if localities were not mentioned on the Museum tablets Wood simply recorded them as unknown, whereas if he had consulted the Cracherode or Children manuscript catalogues he would have found many of them correctly entered therein; *M. alata* is a well-known Brazilian species.

3. *Trapezium sowerbyi* Hidalgo. Pl. 22, fig. 3b. *Holotype* of *T. angulata* (Wood).

Chama angulata. I. T. Supp., p. 6, pl. 2, *Chama*, fig. 1. New Holland.

Crach. No. 35. *Chama oblonga Soland*. Purple oblong *chama*. From Pulo
Condore £3 3s. od.

This species has been discussed on p. 150 above, but is included here because Wood gave it the new name *angulata* (non-Lamarck), although he had previously figured it as *oblonga* Linné (1825, p. 42, pl. 9, fig. 14), probably copied from Chemnitz; how he obtained the locality New Holland is not known, for Pulo Condore, recently confirmed as a genuine record, was clearly shown on the tablet and in both manuscript catalogues.

4. *Voluta subnodosa* Leach

Voluta subnodosa. I. T. Supp., p. 9, pl. 3, *Voluita*, fig. 1. Locality unknown.

Crach. No. 475. *Voluta* . . . Great Undulated *Volute*. From the Straits
of Megellan. The only perfect one known £10 os. od.

This species was described and figured by Leach in 1814 (1, p. 24, Tab. VIII) also without locality, and as recorded elsewhere (Wilkins, 1953, p. 41) was described from a specimen in the Sloane collection, presumed to have come from the Straits of Magellan. Leach said he knew of only two specimens, one in the British Museum and the other belonging to Mr. Bullock. No mention was made of the very fine Cracherode shell which should have been available to him, clearly catalogued and localized by E. W. Gray in 1801.

5. *Tonna ringens* (Swainson)

Buccinum ringens, I. T. Supp., p. 11, pl. 4, *Buccinum*, fig. 1. Locality unknown.

Crach. No. 46. *Buccinum* (*Cassida Auris-Leonis*), Lion's Ear Helmet.
Fom Sibo, an Island near Panama £5 5s. od.

Long confused with the less globular *T. pomum* (Linné) this species was described as *Cassida ringens* by Swainson in 1822 (appendix, p. 4) from the collection of Mrs. Bligh, widow of a certain Captain Bligh. No figure or locality was given with this description, thus the Cracherode shell was the first to appear as an example of the new species in this country. The island of Sibo mentioned in the catalogue entry was evidently an early spelling of Coiba, an island west of the Bay of Panama, a known locality for *T. ringens* (Tomlin, 1927, p. 165).

This and other localities given correctly by Humphrey, and so little used by his followers, show once again that these early records should not be ignored.

6. *Phalium semigranosum* (Lamarck)

Buccinum semigranosum, I. T. Supp., p. 11, *Buccinum*, fig. Locality unknown.

Crach. No. 52. *Buccinum* . . . Quaker Helmet, From New Holland . . . £2 2s. od.

Tryon (1885, p. 275) incorrectly attributes the name of this species to Wood instead of Lamarck (1822), but gives the correct locality South Australia and Tasmania, thus confirming Humphrey's "New Holland".

7. *Strombus galeatus* Swainson (Juvenile)Paratype of *S. galea* Wood.*Strombus galea* junior, *I. T. Supp.*, p. 14, pl. 4, *Strombus*, fig. 14. Locality unknown.Crach. No. 408. *Strombus* . . . *Grooved Wing Shell. From Acapulco* . . . £5 os. od.

This Cracherode shell was mentioned some time ago in a note designating a lectotype of *S. galeatus* Swainson (Wilkins, 1953b, p. 290), selected from a Broderip specimen, formerly labelled *S. crenatus* Sowerby (1825). Apart from Wood, several collectors and authors seemed unaware of Swainson's description of 1823, notably C. B. Adams (1852, p. 111) who gave preference to Wood's *S. galea*, while accrediting the name *S. galeatus* to J. E. Gray. The range of the species appears to be on the West Coast of Central America from Mazatlan to Peru, only fragments being found in the Bay of Panama by Adams in 1850. In 1823 Swainson said that several full-grown specimens had recently been brought from Peru, by whom he does not state, but it is quite possible they arrived through ordinary commerce, or even from the voyage of Humboldt and Bonpland, who visited Peru and Acapulco in the early 1800's. It is equally uncertain who may have collected the Cracherode specimen of *S. galeatus* from Acapulco previous to 1799, but evidence points to Joseph Dombey, the French botanist who was an early visitor to the Panama province, arriving at Peru in 1778. Tomlin (1927, p. 167) records the species from the islands of Coiba and Gorgona.

8. *Strombus thersites* Swainson

Lectotype.

Strombus Thersites, *I. T. Supp.*, p. 14, pl. 4, *Strombus*, fig. 17. Locality unknown.Crach. No. 404. *Strombus* (*Alatus marmoratus*) *Marbled Wing Shell. From New Caledonia. Unique* . . . £6 6s. od.

Little need be said of this specimen as it was discussed in the paper designating it the lectotype of *S. thersites* Swainson (Wilkins, 1951, pp. 238-9), but it is of interest to recall that Wood's figure of 1828 was the first and only figure of the Cracherode shell to appear until the halftone reproduction accompanying the above paper.

9. *Haliotis ruber* Leach

Holotype.

Haliotis rubra, *I. T. Supp.*, p. 26, pl. 8, *Haliotis*, fig. 1. New Holland.Crach. No. 233. *Great Broad Ear Shell. New South Wales* . . . £1 1s. od.

This specimen has already occurred above among the species described by Leach, but Wood's misspelt *rubra* is to be noted, an error repeated by Hanley in his revised edition of the *Index* in 1856 (p. 232).

10. *Padollus scalaris* Leach

Holotype.

Haliotis tricolorata, *I. T. Supp.*, p. 26, pl. 8, *Haliotis*, fig. 2. Locality unknown.Crach. No. 240. *The Broad tuberculated Ear Shell from Hainan* . . . 8s.

Wood's name seems to be merely an error for the *H. tricolorata* Lamarck, although he places it in his Lamarckian index in italics, thus indicating that it is not to be found in the *Histoire*, but whatever his intention, it is only a synonym of *P. scalaris* Leach.

11. *Stomatella sulcifera* Lamarck*Haliotis sulcifera*, *I. T. Supp.*, p. 26, pl. 8. *Haliotis*, fig. 3. Van Dieman's Land.Crach. No. 241. *Haliotis* . . . *Clouded Haliotis. From Van Dieman's Land* . . . £1 1s. od.

In addition to the foregoing list of Cracherode shells figured by Wood in 1828, there are several others referred to by J. E. Gray in two of his papers published at a

later date, in both of which he created new genera and species based mainly on Museum material. The first of these papers appeared in the *Magazine of Natural History* for 1837, (Art. VII, pp. 370-6) with the following title :

Art. VII. A Synoptical Catalogue of the Species of certain Tribes or Genera of Shells contained in the Collection of the British Museum and the Author's Cabinet ; with Descriptions of the new Species. By John Edward Gray, F.R.S., &c. President of the Botanical Society of London.

This paper dealt largely with *Mactra*, *Spisula* and *Lutraria*, several of the species referred to originating from Cracherode specimens, although not always indicated as such by the author, who was notoriously lax in giving proper details in his descriptions. Not the least confusing habit was to attribute names to himself rather than to another, as first publisher, thus at least three of the species to be listed below, attributed to Gray in the paper of 1837, are in reality Gray's manuscript names first published by Wood in 1828.

1. *Mactra aspersa* Sowerby

Holotype of M. tenera Wood.

Mactra tenera, I. T. *Supp.*, p. 4, pl. 1, *Mactra*, fig. 4. Van Dieman's L.

Crach. No. 61. *Mactra tenera*. *Thin Mactra*. From Maria Island Van Dieman's Land . . . *A New Species* £1 1s. od.

"*Spisula tenera* Gray", *Mag. Nat. Hist.* (New Ser.), 1, p. 373, 1837.

Although the Cracherode specimen remains the type of Wood's *M. tenera* it is only a synonym of *M. aspersa* Sowerby described in the Tankerville catalogue in 1825 (App. p. ii). The type came to the Museum in the Broderip collection much later, and was eventually mounted on the same tablet as the Cracherode shell, correctly labelled *Mactera aspersa* Sowerby. It is perhaps surprising to note that although Gray was quite aware of Sowerby's earlier name for this species, and quoted it in his notes on *Spisula*, he still gives Wood's later name priority (attributed to himself), in direct contradiction to his ideas on that subject expressed in the paper on *Cypraea* already noted above (1828, p. 68). The subject of priority is again referred to by Gray in 1847 (p. 129), where he says it is needless for him to dilate on the importance of attending to the law of priority "which I have always advocated, for that is now almost universally allowed, yet I am quite prepared for hearing several conchologists complain of the changes which the observance of this just law will force them to make". While appreciating J. E. Gray's great services to zoology, particularly in the building up of the Museum's great zoological collection (which he made the greatest in the world) it is to be regretted that in his published work he did not always observe the law he so strongly advocated. This neglect presents almost daily problems to those who are obliged to study some of the results of his fifty years of almost feverish activity in all branches of zoology.

2 (a) *Labiosa lineata* (Say)

Holotype of Mactra cyprinus Wood.

Mactra cyprinus I. T. *Supp.*, p. 4, pl. 1, *Mactra*, fig. 1. Peru. 1828.

Lutraria Cyprinus Gray. Gray, *Mag. Nat. Hist.* (New Ser.), 1, p. 375, 1837.

This thin and fragile shell has a long history, and although one valve was "holed" when forced off its tablet by blast during World War II, it is still essentially complete and recognized as the specimen purchased by Humphrey from the Calonne collection in 1797, and sold to C. M. Cracherode for four guineas soon afterwards. This purchase was duly entered in the latter's

personal catalogue, followed by the letters "M.C.", the description only being copied into the Museum catalogue by E. W. Gray in 1801 (pl. 25, fig. 9).

Crach. No. 59. *Maetra Cyprini. Carp's Mouth Maetra. From Peru?*

Unique £4 4s. od.

There is no doubt that Wood's figure, quoted above, was adapted from the Cracherode shell, for the pronounced radial rib and the rather widely gaping valves are shown to advantage, a feature that led Gray to place the species in the genus *Lutraria*, where it appears in a separate section in his paper of 1837, quoted as *Lutraria cyprinus* Gray, with a reference to Wood's original figure of 1828. In 1840 Gray created a new genus *Cypricia* for these Mactroid shells with the gaping valves, which first appeared in the *Synopsis of the contents of the British Museum* (p. 149), a *nomen nudum* until confirmed in his *List of Genera* published in 1847 (No. 565, wrongly dated 1837) with the genus *Labiosa* in use to-day as a synonym. Needless to say, the Cracherode shell was duly labelled *Cypricia cyprina* at some time between 1840 and 1847 by J. E. Gray's assistant Dr. W. Baird, who worked so hard curating the Museum collections from 1840 until his death in 1872.

This Cracherode specimen was figured for the second time by Reeve in the *Conchologia Iconica* as *Maetra cyprinus* Gray, but without locality (1854, *Maetra*, sp. 37), *Cypricia cyprina* appearing only as a synonym. Reeve refers the specimen to "Mus. Cuming", whereas it should have been "Mus. Brit.", there being no doubt as to the origin of the figured specimen. It exhibits a scar caused by damage to the shell during life (not shown by Wood) but noted on the tablet by E. A. Smith some years later, when re-labelling the specimen *Labiosa lineata* Say, and said by him to be the cause of the unusually wide gape to the shell (pl. 25, fig. 9). Incidentally the question whether to favour the genus *Labiosa* Møller or *Cypricia* Gray was discussed by E. A. Smith as recently as 1914 (p. 150), but although he inclined toward the use of the latter, no alteration was made to his label.

Humphrey did right to query the locality "Peru" for according to Dall (1889, p. 65), the species occurs on the East Coast of the United States from New Jersey south to Cuba, while Abbott (1954, p. 449) records it from North Carolina to Texas—"uncommon in most areas of its range". Maxwell Smith (1951, p. 65) extends this range further south to Brazil.

3 (b). *Labiosa lineata* (Say)

Holotype of Maetra recurva Wood. Pl. 25, fig. 12.

Maetra recurva I. T. Supp., p. 4, pl. 1, *Maetra*, fig. 2. Locality unknown.

Lutraria recurva Gray. Gray in *Mag. Nat. Hist.* (New Ser.), 1, p. 375, 1837.

Crach. No. 60. *Maetra recurva. Recurved Maetra. From Brazil* . . . £1 1s. od.

While agreeing that the shell originally named *Maetra recurva* by Humphrey in 1797, figured by Wood in 1828 and referred to by Gray in 1837 is somewhat smaller than the contemporary *Maetra cyprinus*, it is rather surprising that neither of these three authors noticed that the two shells were merely growth stages of one and the same species, for Conrad had already shown them to be synonymous in 1831, a circumstance overlooked by Gray. However, he allowed the two species *recurva* and *cyprinus* to form the separate section *Lutraria* to which the name *Cypricia* was given later. When the six genera of Mactridae enumerated by Gray in 1837 were eventually increased by him to eighteen in 1853 (pp. 33-4) Wood's *recurva* was selected to represent the genus *Cypricia*, in the place of the *Maetra anatina* used in the earlier *List of Genera* (1847, No. 565).

Humphrey appears to have been more fortunate in his locality on this occasion, for as noted above *Labiosa lineata* certainly occurs in Brazil.

The second paper by J. E. Gray in which appeared a few specimens in connexion with Wood's *Supplement* of 1828, was published in the *Analyst* for July 1838 (pp. 302-9), and as it is of some importance, often quoted, but seldom seen, it may be of interest to print the title and superscription in full:

"Catalogue of the species of the genus *Cytherea*, of Lamarck, with the description of some new genera and species.

By John Edward Gray. F.R.S.
of the Zoological Department of the British Museum.

British Museum 1st June, 1838.

Dear Sir,

As you have been kind enough to express a wish that I should send you a zoological paper for insertion in your useful journal, I have great pleasure in enclosing you a monographic revision of the Genus *Cytherea* of Lamarck, which I have found necessary to divide into several genera, and to which I have added the description of the new species which are in the collection of the British Museum, or in my private cabinet.

Yours, very truly,
John E. Gray."

To the Editor of the "Analyst".

This paper contains about twenty new species distributed among the eight genera into which Gray divided the original genus *Cytherea* Lamarck; thus we find the *Cytherea Solanderii* of 1825 moved to *Meroe*, with the name misspelt *Solandri*, an error repeated by future authors using the paper, notably Deshayes (1853, p. 44, *Cuneus Solandri*) and Jukes-Brown (1914, p. 66, *Sunetta Solandri*); *Venus damaoides* Wood becomes *Trigona donacoides* Gray (p. 304), and a new species of *Circe* appears under the specific name *Crachrodii*, apparently an error for *Cracherodei*. Although the type of this species is a Cracherode shell no mention was made to that effect in Gray's description, from which it may be concluded that by this time (1838) the Cracherode collection was very much a part of the Museum's general collection and seldom referred to again individually, "Mus. Brit." or "B. M." becoming legion for specimens from all sources.

In this, as in other papers, Gray mentions very few collectors or localities, but as stated in his superscription, all the specimens were in the British Museum or in his private cabinet, "My collection" appearing quite frequently. However, most of the type specimens from the Gray collection are in the Museum, many having been segregated by various workers after its presentation by Mrs. Gray in 1874 "who had formed it during the many years of a happy married life" (Günther, 1912, p. 28). Figured specimens marked "Gray Cab" by Wood in his *Supplement* are still occasionally recognized among this material, much of it collected during the various voyages and travels undertaken by J. E. Gray's contemporaries.

Apart from *Sunetta solanderii* (Gray) already referred to, there are only two other Cracherode shells so far recognized from the rather scanty descriptions, and these may be briefly noted as follows:

1. *Tivela damaoides* (Wood)

Holotype.

Venus Damaoides, Wood, *I. T. Supp.*, p. 6, pl. 2, *Venus*, fig. 17. East Indies.
Trigona donacoides Gray, *The Analyst*, 8, p. 304.

Crach. No. 176. Pectunculus . . . Flat Thick Variegated Satchel Clam.
From East Indies

The discrepancy in these two names must have been due to an error in transcribing a manuscript label by Wood, for it is certainly the same shell as described by Gray, and must take the earlier name. Gray ignores *damaoides*, referring his *Tivela donacoides* to *Venus donacoides* Gray, "Wood. Supp. t. 2. f. 17." although no such name appeared in the *Supplement*. The species was quoted by Deshayes (1853, p. 47), and Jukes-Brown (1913, p. 267) as *Tivela damaoides*, attributed to Gray on each occasion. The latter author agreed with Hanley 1856 (p. 204) that it was in all probability little more than a variety of *T. Ponderosa* (Koch), from the Red Sea.

2. *Circe crachrodii* (Sic) Gray

Holotype. Pl. 25, fig. 14.

J.E. Gray, *The Analyst*, 8, p. 307, 1838. Unfigured.

Crach. No. 169. Pectunculus . . . Oval variegated Clam. From Guinea . 5s.

The original spelling of this species has already been noted but it may be added that Deshayes corrected it to *Circe Cracherodii* Gray without comment in his *Catalogue of the Conchifera* (1853, pp. 92-93).

The above species concludes the lists of type and figured specimens used by various authors during the first half of the nineteenth century, when the Cracherode collection became finally distributed among the large general collection, having ceased for some time to be a separate entity. Some specimens were even mounted on tablets with others of the same species from quite different collections. Before leaving this period, during which Children and Gray accomplished so much in rehabilitating and adding to the collections, it may be of interest to return for a moment to 1824 to record a difference of opinion between William Swainson and J. E. Gray, which was given a certain amount of publicity in the early numbers of the *Zoological Journal* (1824-25) and closely associated with a Cracherode specimen of *Thiara cancellata* Röding, then known as *Melania setosa* Swainson.

Thiara cancellata Röding

Crach. No. 472. Turbo . . . (*Spirilla spinosa*). Freshwater spiral spined
Shell. From Admiralty Island. New Guinea. . . . £5 5s. od.

Melania setosa was described by Swainson as a new species in April 1824 (p. 13), with particular notice of the curious bristle-like structures said to be embedded into the hollow spines adorning the upper part of the whorls of the shell. In his further observations, Swainson refers to these as "a formation altogether unprecedented amongst this class of animals", the bristles being "rooted as it were into the body of the shell". Gray read the description of this new species with evident surprise, for in an article sent to the *Zoological Journal* soon afterwards (June, 1824, p. 254) the following paragraph appears from his pen—"Now it happens that there are two specimens of this 'new and most extraordinary' shell in the British Museum, one of which was in the Cracherode collection, No. 472, and named by Humphreys '*Spirilla spinosa*, fresh water spiral spined shell, from Admiralty Island, New Guinea,' and another presented by Dr. Leach; both have to my knowledge been exposed to the public view for upwards of three years, and I am very much inclined to believe that the *Buccinum aculeatum* of Lister's Mantissa, t. 1055. f. 8. is intended for this shell; but from the name of Humphreys, I some time ago named the specimen in the Museum *Melania spinosa*."

Gray goes on to say there is little difference from *Melania amarula* except that in the species under discussion the spines are tubular with the periostracum drawn in and enclosed in the tube, the processes of which form the "bristles". He then proceeds to figure the two museum specimens (*Zool. J.* pl. VIII, figs. 6, 7, 8) with a more detailed one of the periostracal processes. The first figure is the Cracherode shell No. 472 (which had lost its bristles) and the second Dr. Leach's more perfect specimen, from which the enlargement of the bristles was taken. Gray cites *Neritina corona* (*Clithon coronata*) as another analagous species, in which the spines are tubular, at any rate in the earlier growth stages. In the next number of the *Zoological Journal* (October, 1824, p. 399) Swainson replied to Gray's criticism in a letter to the editors dated 15th August 1824, couched in truly Swainsonian style, in which he counters Gray's suggestion that the shell was not new to science, or that it presented nothing extraordinary in its construction. He was particularly incensed at Gray's remark that he had already named the specimen in the Museum collection, for "until now, naturalists have considered a species to be *new*, which has not been described or figured in any printed book. But, according to the singular doctrine of this writer, we are bound to make the tour of all the museums—public or private—native or continental, and consult all their manuscript catalogues, before we venture to say we are describing a new object. *Melania setosa* appears to exist in the British Museum, and to be named in the manuscript catalogue. The shell may be in a dozen collections, and have a dozen manuscript names, for ought I know to the contrary. What follows? Why, that the shell is not new to science; although it has confessedly never been described, or publicly recorded".

Swainson then continues, much in the same tone, suggesting that in supposing Lister's figure (tab. 1055, fig. 8) to represent *Melania setosa*, Gray was flouting the authority of Linnaeus, Gmelin, Martini and Lamarck, "who had all quoted this identical figure as representing *M. amarula*, Lam". This was due to the fact that Lister's figure (which is certainly Swainson's shell), in common with most early figures, did not show the bristles peculiar to the species, but not absolutely necessary for its identification. In Lister's specimen the bristles were broken off, thus causing most early authors to consider it a variety of *Melania amarula*. Even the Cracherode shell figured by Gray was practically denuded of bristles, a feature that drew another volley from Swainson, who was obviously too annoyed to realize that it had been used merely to illustrate the hollow spines, which are quite well shown, while Leach's shell (well drawn in Gray's fig. 7) shows the bristles to better advantage. These two specimens were the only ones available to Gray at the time, but sufficient to prove his point.

In the following January Gray replied to Swainson's attack, producing further evidence to prove his statements, quoting at least four early authors who had figured or described the species. Swainson had objected to Gray's analogy of *Neritina corona* as a tubular spined species, citing five original descriptions from "the greatest naturalists who have written on the subject" including Chemnitz, to disprove it. Unfortunately he did not seek further than these authors' specific characters, for in his full description of the shell now known as *Clithon coronata* Leach, Chemnitz clearly stated that the spines "are inwardly hollow like a reed", a point which Gray

did not hesitate to bring home, in addition to other references overlooked by his opponent.

Nothing more appeared in the *Zoological Journal* from the pens of Gray or Swainson on this subject, but in 1833, when the latter again published a description and excellent figure of his *Melania setosa* in the *Zoological Illustrations* (Ser. 2) the text to plate 1 of *Melania* concludes with the following paragraph—"We were unwillingly drawn into a controversy respecting this shell some years ago. Our sentiments, in every thing that regards the shell itself, are unchanged. Not so with respect to the individual. The civilities and attentions we have since received from Mr. Gray, leave us to regret, very sincerely, that such a discussion should have ever taken place".

The importance of this discussion has of course receded with the years particularly since the introduction of many of the names used in the *Museum Boltenianum* of 1798 into the current nomenclature, sponsored by Sherborn & Sykes (1906) and Dall (1915), wherein the shell formerly known as *Melania setosa* Swainson, appears as *Thiara cancellata*, clearly referred to the figure of Chemnitz (9, t. 134, figs. 1220' 1221, 1786) and here attributed to P. F. Röding as first publisher.

As already stated Cracherode specimens were seldom, if ever, referred to as such after 1838—one or two specimens were certainly figured by Reeve in the *Conchologia Iconica*, and marked "Mus. Brit.", notably the *Lulraria cyprinus* already recorded, and a juvenile specimen of *Cymbium tessellata* (Lamarck) figured in the monograph of that genus (1861, sp. 106, c), and catalogued by E. W. Gray in 1801 as follows:

Crach. No. 480. *Voluta* *Haustrum Soland.* (Melo . . .) *The Coronated*
spotted Melon. From Japan £5 5s. od.

This is the *Voluta haustrum* of the *Portland Catalogue* (1786, No. 3054) referred to a figure in Martini & Chemnitz (1777, fig. 781) and said to come from China. Lamarck quotes the same figure in his original description, also that of Lister (t. 797, fig. 4), of which the original is still in the British Museum. Maxwell Smith (1942, p. 47) records the species from the Indian Ocean and China.

5. LIST OF CRACHERODE SPECIMENS ORIGINALLY IN THE CALONNE COLLECTION

The Calonne collection has of necessity been referred to several times in the preceding pages, and was also briefly mentioned in connexion with the Banks collection (Wilkins, 1955, p. 77). As the Cracherode shells included a number of specimens described in the *Museum Calonnianum* in 1797 (purchased by George Humphrey at the sale and resold to Cracherode) it seems appropriate to include a list of these with some further notes on its famous contemporary, particularly as a study of the manuscript catalogues revealed a number of Calonne specimens hitherto unknown to exist in the British Museum collections. Jackson (1937, p. 333) records a few Calonne specimens in the Manchester Museum, bearing Humphrey's labels, and once the property of William Swainson (purchased by his father in 1815), but beyond these, and one or two shells from the Broderip (*Ex. Tankerville*) collection, little was known of the whereabouts of the Calonne shells distributed by public auction in 1797. A very full description of the Calonne catalogue, or "Specification" as the anonymous author called it, was given by Iredale in 1937, (pp. 408-19). This included an exhaus-

tive list of all the authors who had partially or fully adopted the many new specific and generic names found therein, even suggesting, in direct opposition to Dall and other experts, that some further action should be taken to rescind Opinion 51 of the International Commission (1912). This completely rejected the use of the *Museum Calonnianum* as a basis for any nomenclatorial work. Nevertheless, as explained by Iredale, the printed Calonne catalogues were fairly widely circulated, so that many of the names have come to be accepted in the works of later British and continental authors.

The main interest here, however, is with actual Calonne specimens which can be linked with those in the Cracherode collection. The descriptions given in E. W. Gray's manuscript catalogue of 1801 (copied from Cracherode's personal catalogue and Humphrey's labels) agree with the Calonne entries in most respects, showing that Humphrey used these entries as a basis for labels supplied with Calonne specimens sold by him after 1797. Sixteen Calonne shells have so far been recognized and are listed below, preceded as usual by the modern name in bold face type, followed by the Cracherode and Calonne catalogue entries under their respective numbers. One or two of these may have appeared in previous lists, but are repeated here for easy comparison.

1. ***Murex (Pteronotus) pinnatus*** Swainson

Crach. No. 320. *Murex (Triplex pinnatum) Finned triple ridged Triplex.*

From Java £3 3s. od.

Calonne No. 741. *Triplex Pinnatum—La Coquille à Nageoire—Finned—Java—Murex tripterus Born. Extremely scarce.*

It is of interest to note that *Triplex* was one of the genera used by George Perry in the *Conchology* of 1811, and marked as "now first invented and adopted by the Author of this work"—even the Linnean genus *Patella* was marked in the same way! The *M. tripterus* Born does not apply to this species, which was first described by Swainson in 1822 (p. 17), but is frequently attributed to Wood (1828).

2. ***Murex (Alipurpura) acanthopterus*** Lamarck

Pl. 26, fig. 15c.

Crach. No. 321. *Murex (Triplex pungitium) The Stickleback Triplex* . . . £3 3s. od.

Calonne No. 742. *Triplex Pungitium—Les Piquants—Stickleback—very rare.*

While it is undesirable to quote hitherto unknown names for established species, it would be useless to conceal those that appear under a printed catalogue number, which can be checked and recognized, so that now and again exceptions are made for the sake of historical sequence, bearing in mind that Calonne names are not available unless validated by a later author. Dillwyn printed a number of Calonne names in his synonymies, but he does not seem to have recognized Humphrey's *M. pungitium*.

3. ***Echinochama arcinella*** (Linné)

Pl. 26, fig. 15b.

Crach. No. 39. *Chama arcinella Linn. (Gryphus spinosus), Thorny Heart*

Gryphus. From Martinique £3 3s. od.

Calonne No. 1020a. *Lacinia spinosus var. a. White outside, yellow within—Le Coeur Epineaux—Thorny Heart—Martinique—Chama arcinella Linn.*

In the Museum copy of the Calonne catalogue the genus *Lacinia* (p. 53) is altered by the author (Humphrey) to *Gryphus*, under which name the specimen was sold to Cracherode, the Linnean

name being given preference by E. W. Gray. Sherborn (1902, p. 440) quotes "'Gryphus. Humph. 1797' Scudd. I cannot find this word", from which it appears Scudder was using an altered copy and Sherborn an unaltered one, for he later records "Lacinia G. Humphreys, Mus. Calonne 1797" without comment (p. 509). Two of these altered copies of the Calonne catalogue are known; one in the British Museum (Nat. History) mentioned above (once the property of J. E. Gray, with his MSS. notes), and another in the Manchester Museum, recorded by Jackson (1937, p. 337), in which the alterations noted by him coincide almost exactly with those in the former. A third, privately-owned copy, is completely free from alterations.

"Gryphus *Humph. MSS. 1797*" and "*Lacinia. Humphrey 1797*" were both mentioned as synonyms of *Chama* and *Arcinella* by Gray in 1847 (Nos. 657, 658), but with a characteristic error in the spelling of *Lacinia*, and to make matters worse, these two numbers were referred to *Licina* (*Cyclophorus*), in the index.

4. *Pseudochama radians* (Lamarck)

- Crach. No. 41. *Chama* . . . (*Lacinia contraria*) *Contrary furbelowed Shell.*
The beak winds to the left. From Martinique . . . £1 is. od.
- Calonne No. 1016. *Lacinia contraria—La Contraire—Contrary—The beak of this species winds to the left contrary to the rest.*

In his *Conchological Observations* (1824, p. 222) J. E. Gray refers to reversal among the attached and inequivalved shells, noting that Lamarck divided his *Chamae* into "those which have the beaks turned to the right, and those which have them turned to the left; when the fact is that they are only attached by the right or left valve".

There are several species of these apparently sinistral or "mirror images" among the Chamidae, the anatomy and prodissoconchs varying sufficiently for the creation of a separate genus *Pseudochama* by Odhner in 1917 (p. 28). Tucker Abbott (1954, p. 393) refers to *P. radians* as the Atlantic Left-handed Jewel Box, which occurs from Southern Florida to the West Indies, the only species to be found in Eastern America. *Pseudochama exogyra* Conrad and *P. echinata* Broderip are Pacific species which also have the beaks turning the opposite way to the true *Chamas*.

5. *Labiosa lineata* Say

Pl. 25, fig. 9.

- Crach. No. 59. *Macra Cyprini. Carp's Mouth Macra. From Peru?*
Unique . . . £4 4s. od.
- Calonne No. 838. *Tellina Cyprini—La Gueule de Carpe—Carp's Mouth—Extremely scarce. The country is unknown. Perhaps Peru.*

This species has already been fully dealt with, but it may be noted that with the passing of the years the vernacular name has changed to the Smooth Duck Clam, its congener *L. plicatella* Lamarck being known as the Channeled Duck Clam, thus distinguishing them from the heavier *Spisulas* or Surf Clams of the Eastern Coast of America.

6. *Mytilus chorus* Molina

- Crach. No. 71. *Mytilus Peruvianus. The Peruvian Muscle. From Acapulca. Uncoated and polished* . . . £5 5s. od.
- Calonne No. 786. *Mytilus Peruvianus—La Peruvienne—Peruvian—Peru. Extremely scarce.*

This fine large species has always been popular in collections, particularly when polished, the Cracherode shell being of a fine lustrous purple and still in excellent condition. The shells were largely used by the early natives of South America for domestic purposes, the edges frequently being sharpened for use as very efficient razors. A medium-sized specimen so sharpened is in

the Sloane collection, brought from the Straits of Magellan in the early part of the seventeenth century. *M. chorus* was recorded by d'Orbigny from Chili and Peru (1847, 5, p. 648).

7. *Crenatula folium* Gray

Pl. 24, fig. 7.

- Crach. No. 93. *Ostrea* . . . (*Vulsella folium*) *White Leaf* elegantly
marked *Vulsella*, faintly rayed with violet. From . . .
Unique £8 8s. od.
- Calonne No. 821. *Vulsella Folium*. *La Feuille d'Arbre Blanche*—*White Leaf*—The
country of this very singular and delicate species is not known. Its
form and texture is extremely curious, and it is the only one we know of.

For a full description of this specimen see p. 161 above.

8. *Pedum spondyloideum* (Gmelin)

- Crach. No. 94. *Ostrea Ligo*. *The Spade or Hoe Oyster*. From . . .
Unique £10 10s. od.
- Calonne No. 998. *Ligo*—*La Houlette*—*Spade, or Hoe*—This is the only individual of this
very singular species that we recollect to have seen. It seems to consti-
tute a link between the *Ostreae* and *Spondyli*, or is perhaps a new
Genus, of which species 997 may be considered as another kind. Its
native country is unknown.

It is not surprising that this shell was considered such a rarity in the old days, living as it does immured in blocks of madrepor, fixed by a strong byssus, with only the tips of the valves showing above the surface. The first good figure and description was published by Chemnitz in 1785 (8, figs. 669–70), with the name *Ostrea spondyloidea*. Humphrey, who frequently referred to Chemnitz in the *Portland Catalogue* in 1786, ignored or was not yet aware of the name finally established by Gmelin in 1791 (p. 3335, 109), based on the figures of Chemnitz. However, Humphrey was not far wrong in his suggestion of a connecting link between *Ostrea* (which then included *Pecten*) and *Spondylus*. *Pedum* was placed between *Semipecten* and *Spondylus* by Thiele (1935, p. 809), the shells of the former—although thinner—greatly resembling the orbicular juvenile stage of *Pedum*.

The finest figures of the species (*in situ* in a coral block) were given by Quoy & Gaimard (1835, pl. 76, figs. 15–21). Mature and juvenile shells were included, together with several anatomical figures showing details of the *ocelli* or "eyes", so characteristic a feature of the mantle edges of *Pecten* and *Spondylus*.

9. *Solenotellina violacea* (Lamarck)

- Crach. No. 186. *Solen violaceus Soland.* (*Trulla violacea*) *Violet Solen*.
From *Tranquebar* £3 3s. od.
- Calonne No. 807. *Solen violaceus*—*Le Baquet*—*Violet Tray*—*Tranquebar*—*Solen vio-*
laceus Soland.

The name *violaceus* can be traced further back to the *Portland Catalogue* of 1786, where it appears on p. 161, No. 3514: "A very fine *Solen violaceus*, S, from China—extremely scarce", and it is evident that the name was adopted by Lamarck from this or the Calonne catalogue. Humphrey may have obtained his specimens from Tranquebar, but the Portland locality seems more likely, for the species is synonymous with the *Soletellina adamsi* Reeve, named in MSS. by Deshayes in the Cuming collection, from specimens collected on the Island of Negros in the Sulu Sea. The Cracherode specimen has had the yellowish-green periostracum removed to show the fine violet colouring, but in all other respects it exactly matches Reeve's figure and type specimen.

10. *Spondylus americanus* Hermann

Crach. No. 190. *Spondylus armatus*. *Large scarlet and white armed Spondylus or hinged Oyster, with long palmated spines. From St. Domingo* £4 4s. od.

Calonne No. 1021. *Spondylus—Huître à Charnière—Hinged Oyster. Armatus var. K. White and scarlet, the spines long and palmated. L'Arme—Armed—St. Domingo—Spondylus Gaedarus var. Linn. & Solander.*

The Cracherode *Spondylus* have always proved a great attraction since they were first exhibited in the early 1800's, but it is only recently that they have been recognized as original Calonne specimens, described in some detail by Humphrey in the *Museum Calonnianum* (pp. 54–55). There were in all twenty-six varieties of his *S. armatus*, each listed under a letter of the alphabet, the four specimens purchased by Cracherode being varieties *b*, *k*, *v* & *x*. The prices ranged from three to five guineas each, which may not seem so exorbitant, even allowing for changing values, when it is learnt that shells of *Spondylus americanus* in as fine condition as the Cracherode specimen are still considered very rare, and may cost as much as fifty dollars in the American market to-day (Abbott, 1955, p. 56).

There is no need to repeat the catalogue entries relating to the three remaining specimens, entered consecutively by E. W. Gray in 1801 (Nos. 191–3) but 193 is the particularly attractive group of four juveniles of varying colours still on exhibition. The locality given for these Calonne shells, St. Domingo, is of interest, for it shows them to be contemporary with those examined by Hermann when first describing the species in 1781. There is no doubt they were in some other great continental collection before being purchased by the Prince of Calonne and ultimately sold in England in 1797.

For many years this well-known species had been attributed to the *S. americanus* of Lamarck (1819, p. 188), but in 1898 Dall dealt very thoroughly with the recent and fossil *Spondylus* occurring from Florida to Cape Hatteras, deciding that *S. echinatus* Martyn 1784 should replace the later *americanus* Lamarck. This was accepted until 1912, when Hedley and Pilsbury discovered a paper in an old German periodical by Hermann¹ in which the author described the difference between the Mediterranean and American forms of *Spondylus*. He gave each a name, with a brief Latin description, based on the form of the ligament. The paper was sent to the editor in the form of a letter, part of which, translated from the German, runs as follows:

“Honoured Friend,

Here are a few shells for the naturalist, they seemed new to me a short time ago when I classified my collection by the system of Linné with the help of the best known authors. Should some of it be already published, please put my not knowing about this down to the dearth of literature and lack of time to read all of it.

Spondylus

The collector has good reason to distinguish the so-called spined oysters which come from Malta, from those which come from America and are brought via St. Domingo to France, but I do not remember seeing the differences described anywhere. Even the excellent Herr v. Born does not mention it in his *Ind. Mus. Caes. Vindob.* I am quite sure that both varieties are in the collection of Vienna. The difference between them consists of an elongation of the lower shell posterior of the “lock”, which is said by Linné to be flat or sawn off, and is completely smooth and without a groove. Whereas in the American there is a groove in the centre, and the *black cartilage*, situated in the median dell seems to extend along it.

¹ Jean Hermann (1738–1800). French physician and professor at Strasbourg, author of *Tabula affinitatum animalium* 1783.

I should therefore call the first

Spondylus (mediterraneus) valva inferiore pone cardinem abrasa integra

and the other

Spondylus (americanus) valva inferiore pone cardinem abrasa sulco cartilaginiferor exarata."

Since Herman referred to Linné in his paper it seems odd that he did not use *S. gaedaropus* for the Mediterranean form, but nevertheless, in separating the Eastern and Western forms he was well in advance of many later authors, notably Dillwyn (1817, pp. 209-10), who applied the Linnean *gaedaropus* indiscriminately to all species of *Spondylus* irrespective of locality. He even suggested that the distinctive *S. regius* Linné was "probably nothing more than one of the almost endless varieties of *S. gaedaropus*". Actually the last-named species is far less variable than some species of the genus, and can usually be separated even without the aid of the closed ligamental pit mentioned by Hermann, an excellent character in distinguishing some of the more puzzling features of certain forms of *Spondylus* with doubtful localities.

While admitting that Hermann was speaking rather collectively in his description of *S. americanus* in 1781, there is really no doubt of the species referred to, for the port then known as St. Domingo (now Port-au-Prince, capital of the Haytian Republic) was within reach of localities where it still occurs, but perhaps not quite in the "*grande quantité*" noted by Chemnitz (1784, p. 79). Fulton, however, who had accepted Hermann's name in 1915 (p. 356) later suggested that as no adequate description or reference to a figure was given, the *S. americanus* Hermann 1781 was simply a *nomen nudum*, and should be replaced by the next oldest name, *S. dominicensis* Röding 1798, but since a name, brief description and reasonable locality were given by Hermann his name is still favoured in current literature.

In 1856 Reeve created a number of species from the various forms of *S. americanus* found in the Cuming collection, most of which were listed as synonyms of that species by Dall in 1898 (p. 760), when he maintained that with one exception (*S. gussoni* Costa) all forms of *Spondylus* from the West Indian region were variations of one and the same species. Fulton (1937, p. 38) and Perry & Schwengel (1955, p. 45) allowed two species—*S. americanus* Hermann for the typical unattached white and red form, with the long foliated spines, and *S. ictericus* Reeve for the attached and more variably coloured, shorter spined shells so common to the West Indies. This seems reasonable enough, for long series of shells appear to fall into two groups, but it would perhaps be preferable to refer to Reeve's *ictericus* as a related form rather than a distinct species, particularly as clusters of shells may be composed of individual examples of this and other so-called species, all living within the compass of a few inches.

Florida seems to be the headquarters of the typical form of *S. americanus* Hermann, fine specimens measuring five to six inches in length being recorded by Johnson (1911, p. 11) from ten fathoms off Rock Island, one of the Anclote Keys. Fine unattached specimens occur in about five fathoms at Tarpon Springs, where they are brought up by the sponge fishers, frequently covered with sponge, thus preserving the long and delicate spines from damage (Perry & Schwengel, 1955, p. 45). It was probably from similar localities that the Calonne shells were collected and taken to the French port of St. Domingo for shipment to Europe in the eighteenth century.

14. *Spondylus aurantius* Lamarck

Crach. No. 194. *Spondylus Hystrix*. Porcupine *Spondylus*. From China.

A young one £2 2s. od.

Calonne No. 1029. *Spondylus Hystrix* var. a. White and orange, mottled with black.

15. *Spondylus auriantius* Lamarck

Crach. No. 195. *Spondylus Hystrix* var. Orange variety of Porcupine *Spondylus*. From China

£6 6s. od.

Calonne No. 1029. *Spondylus Hystrix* var. a. White and orange mottled with black.

These two specimens are typical forms of *S. aurantius*, a fairly common Indian Ocean species recorded by Lamy from Mauritius, India, China, Philippines and the Seychelles (1938, p. 193). As with other species of the genus, *S. aurantius* appears in the literature under names too numerous to mention. It was frantically over-described by Reeve in the *Conchologia Iconica* monograph of 1856, his *S. butleri*, *castus* and *spectrum* are all synonyms of *S. aurantius* Lamarck, the characters of two or even all three of these so-called species sometimes occurring in a single specimen, but always there are the black or brown spots on the umbos, noted by Humphrey. Many of Reeve's and even Chemnitz's names were given credence by Lamy in his rather disappointing *Révision* of 1938, in which one might have expected some of these obvious errors of judgment to have been rectified.

16. *Spondylus gaedarpus* Linné

- Crach. No. 200. *Spondylus gaedarpus* Linn. (*S. purpureus*) *Purple Spondylus*. *From the Mediterranean* £1 1s. od.
 Calonne No. 1023. *Spondylus Purpureus* var. *c. having a foliated under-valve* .5. . *Le Pourpre—Purple—Mediterranean—Spondylus Gaedarpus* var. *Linn. & Soland.*

This specimen is a typical *gaedarpus*, rich in colour, with a touch of orange in the foliations of the under-valve and is the first of six specimens listed by Humphrey under No. 1023, all of which are apparently the same species but differing slightly in colour and formation. Six further species are noted (Nos. 1024–1029) but most of these are evidently colour forms of *S. aurantius*, except *S. hystrix* (No. 1029) already stated to be a typical *aurantius* Lamarck.

6. CONCLUSION

The above entry concludes the detailed lists of Cracherode specimens and also the account of the Cracherode collection as a whole. This has been shown to be of greater importance than formerly realized, and to include specimens still extant from the very early days when the British Museum, if not exactly in its infancy, had yet to become one of the greatest institutions of its kind in the world. From a study of the collection it has also been possible to trace in some measure the rapid growth and development of a serious interest in the mollusca in this country from the end of the eighteenth century to the middle of the nineteenth century, a period during which Conchology and Malacology came to be recognized as important sciences, rather than pastimes for the mere dilettante.

Cracherode certainly looked on his shell collection simply as a series of attractive objects acquired for his own enjoyment, but having a true "nobility of mind" he made sure that his carefully selected treasures would be available for the use and enjoyment of others, a gesture that has been fully justified. The Cracherode shells have formed an integral part of the exhibited and study collections for over 150 years, and have provided material and given inspiration to many early workers and collectors.

7. A BRIEF BIOGRAPHY OF C. M. CRACHERODE M.A., F.R.S., 1730–1799

Clayton Mordaunt Cracherode was born at Taplow, Buckinghamshire, on the 23rd June 1730, the only son of Colonel Mordaunt Cracherode who had command of the Marines on Anson's voyage round the world. His mother was Mary, daughter of Thomas Morice, paymaster to the British forces in Portugal, but contrary to these

strong military connexions, it was the father's wish that his son Clayton should make the Church his profession. He entered Westminster School in 1742, and went on to Christ Church Oxford in 1746, taking his B.A. in 1750 and M.A. 1753, later holding the Curacy of Binsey, near Oxford, but "neither sought nor obtained preferment".

On the death of his father in 1773, Clayton Cracherode inherited an ample fortune, said to be several hundreds a year in landed property, and nearly one hundred thousand pounds invested in the "sweet simplicity of three per cents". (Edwards, 1870, p. 419.) He also became the owner of the Manor of Great Wymondley, held from the Crown subject to the service of presenting to the King the first cup from which he drinks at his coronation. The apprehension of being called upon to perform such service caused no little uneasiness to the new owner, who is said never to have visited his Hertfordshire estate, and at no time travelled further than to the University of Oxford.

Cracherode was a man of extremely regular habits, and was accustomed for forty-one years of his life to go every day from his home in Queen's Square, Westminster, first to Elmsly's the booksellers in the Strand, and then to Tom Payne's by the Mews-gate, a literary coffee house where he would meet and talk to friends with similar tastes to his own. Though Cracherode was heard often to complain of the high prices asked for books and prints his purchases continued unabated until his death in 1799, when his library contained no less than 4,500 volumes, all remarkable for their rareness or excellence of impression, together with many portfolios of exquisite prints and drawings which included the finest examples of Rembrandt and Dürer.

Coins, medals, gems and minerals "worthy of an imperial cabinet" also formed a part of the collection which it was the principal aim of his life to amass. Modesty seems to have been the keynote of Cracherode's "noiseless" career, for he was wont to refer to his great possessions as mere "specimen collections", and yet his bequest of them to the British Museum eclipsed most of the earlier gifts made after 1753. Although he "carefully avoided the bustle and grandeur of public life" Cracherode enjoyed the company and conversation of a small circle of friends, some of whom "were not less enobled by their talents and their virtues, than by their exalted rank and well-supported dignities". To these, who included his two greatest friends—Shute Barrington, Bishop of Durham, and Cyril Jackson, Dean of Christ Church—his house was always open when they wished to consult his books, prints, coins and medals.

Mr. Cracherode was elected a Trustee of the British Museum in 1784, and a Fellow of the Royal Society in the following year. His conscientious nature is exemplified in a small manuscript notebook (B.M. Add. 47611), in which he recorded some of the happenings at the Trustees' meetings, at which he appears to have been a constant attendant. It covers the period 1784 to 1796 and is devoted largely to carefully written lists of his fellow Trustees, and the all too frequent changes brought about by death. Staff changes were also recorded, together with outstanding acquisitions, principally books and antiquities, although there is one note of a collection of shells, insects, etc. made by Lord Charles Cavendish, presented in 1784.

Unlike many private notebooks of the period, this one is rather disappointingly free from any personal opinions, being just a plain and straightforward record of attendances and business transacted, but even so it contains many interesting notes relating to the early history of the Museum while in Montague House.

Although so fond of books, Cracherode's own literary efforts were confined to a single set of Latin verses printed in the *Carmina Quadragesimalia*, composed by students of his house at Oxford in 1748, a fact not overlooked by contemporary lampooners, to whom his collecting propensities and love of fine volumes were well known, through his frequent visits to the literary coffee house at the Mews-gate, where many of their best shafts were prepared. The following lines by Mathias were quoted from the *Pursuits of Literature* (1794), in the *Gentleman's Magazine* for April 1799, and again by Edwards (1870, p. 421), but in the later version Doctor Dibdin replaces the "Doctor Dewlap" of the original :

" Or must I, as a wit, with learned air,
Like Doctor Dewlap, to Tom Payne's repair,
Meet Cyril Jackson and mild Cracherode there?
' Hold! ' cries Tom Payne, ' that margin let me measure,
and rate the separate value of the treasure '
Eager they gaze. Well, Sirs, the feat is done
Cracherode's Poetae Principes have won! "

It is recorded in the same issue of the *Gentleman's Magazine* that the "mild Cracherode" paid his last visit to the parlour of the old bookshop on the Monday before his death "in a manner that could not escape the observation of its owner, to whom, as to his father, he had been so liberal a customer". He died on the following Friday (25th April) and was buried in the East Cloister of Westminster Abbey, attended only by his friends Lord Spencer and the Bishop of Durham.

Cracherode's considerable fortune passed to his sister Ann Cracherode, then nearly eighty years of age (d. 1802), and as already stated the whole of his library and collections were bequeathed to the British Museum.

In 1806, not long after Cracherode's death, a certain amount of unpleasantness was caused by the theft of a number of his rarer prints from the Museum by Robert Dighton, the caricaturist, who rather foolishly sold them to dealers to whom they were well-known, the prints being of so rare a nature that the purchasers became suspicious. Most of them were recovered later, but the episode led to the dismissal of William Beloe (1756-1817), who was then in charge of the Cracherode prints and books. The story goes that Dighton insinuated himself into the good graces of the easygoing *bon-vivant* custodian by sending him delicacies for his table. Dibdin of course made lighthearted use of the theft of these treasures in his *Bibliographical Decameron* (1817, 3, pp. 326 *et seq.*) and prints a dramatic version of the happenings when related to Cracherode and some of his cronies, imaginatively staged in the "shades below".

There is no doubt as to the extraordinary value of the Cracherode books, prints, coins and minerals, but little was recorded regarding the collection of shells in the few biographical notices available. It is therefore felt that the present paper

will have remedied this deficiency and rendered some slight extra service to the memory of the man whose generosity did so much to strengthen the foundations of our National Museum.

Only one likeness of C. M. Cracherode was ever taken, and that only in pencil by Edridge, by order of Lady Spenser, but even this was not allowed to be engraved during his lifetime. Engravings from it were eventually published by T. F. Dibdin in the third volume of the *Bibliographical Decameron* in 1817 (facing p. 327) and by William Clarke in his *Repertorium Bibliographicum* in 1819, (facing p. 11). The line drawing appearing on the cover and title page of this *Bulletin* was adapted from the latter by the present author.

8. REFERENCES

- ABBOTT, R. T. 1954. *American Seashells*. xiv + 541 pp.; 100 text-figs.; 40 pls. New York. 4°.
- 1955. *Introducing Sea Shells*. 64 pp.; 19 text-figs.; 8 pls. New York. 4°.
- ADAMS, C. B. 1852. *Catalogue of Shells collected at Panama, with notes on their Synonymy, Station and Geographical Distribution*. vii + 334 pp. New York.
- ADAMS, H. & A. 1853-58. *The Genera of Recent Mollusca; arranged according to their organization*. 3 vols.; 138 pls. London.
- ALLAN, J. 1950. *Australian Shells*. xix + 470 pp.; 112 text-figs., 86 pls. Melbourne.
- "B." 1828. Observations on the Causes that have retarded the progress of Natural History in this Country . . . etc. *Loudon's Mag. Nat. Hist.* 1: 14-17: 181-184.
- BAKER, H. B. 1923. Notes on the radula of the Neritidae. *Proc. Acad. Nat. Sci. Philad.* 75: 117-178; 16 pls.
- BECK, H. J. LE. 1799. An Account of the Pearl Fishery in the Gulf of Manar in March and April 1797. *Asiatic Researches. Trans. Soc. Bengal*, 5: 393-411. (See also *Annual Register*, 41: 380-391. 1799.)
- BIRCH, J. Q. 1955. Resurrection of Ancient Names. *Minutes Conch. Club. Calif.* No. 152: 2-3.
- BOLTEN, J. F. 1798. See Röding 1798.
- BRITISH MUSEUM. 1809. *Synopsis of the Contents of the British Museum*. 2nd edition. xxxii + 2; 96 + 13 pp. London.
- 1827. *Ibid.* 25th edition. 2 + 188 pp. London.
- 1840. *Ibid.* 42nd edition. iv + 370 pp. London.
- BRITISH MUSEUM (NATURAL HISTORY). 1903-40. *Catalogue of the Books, Manuscripts, Maps and Drawings in the British Museum (Natural History)*. 8 vols. London. 4°.
- 1904. *The History of the Collections contained in the Natural History Departments of the British Museum*. 1: xvi + 442 pp. Minerals by L. Fletcher: 343-442.
- 1906. *Ibid.* 2: Birds by R. Bowdler Sharpe: 79-515. Mollusca by E. A. Smith: 701-730.
- 1912. *Ibid.* 2: Appendix by A. Günther: 109 pp.
- CARPENTER, P. P. 1855-7. *Catalogue of the Reigen Collection of Mazatlan Mollusca in the British Museum*. xvi + 552 pp. London.
- 1864. A Supplementary Report on the Present State of our Knowledge with Regard to the Mollusca of the West Coast of North America. *Rep. Brit. Assoc.* 1863 (Pub. August 1864).
- CHENU, J. C. 1845-46. *Bibliothèque Conchyliologique*. Sér. I-II. 5 vols. illus. Paris. 4°.
- CHILDREN, J. G. 1822-4. Lamarck's Genera of Shells translated from the French. 177 pp.; 10 pls. London. Originally issued in *Quart. Journ. Sci.* etc. 14: 15: 16. (For full collation see *Catalogue of Library, British Museum (Nat. Hist.)* 3: 1049, and Kennard & Woodward, 1926 p. 371.)

- CLARKE, W. 1819. *Repertorium Bibliographicum*. xlviii + 673 pp.; 12 pls. London.
- COMFORT, A. 1949. Biochemistry of Molluscan shell pigments. *Proc. Mal. Soc.* **28**: 79-85.
- CONRAD, T. A. 1831. *American Marine Conchology*. iv + 72 pp.; 17 pls. Philadelphia.
- 1837. Descriptions of new Marine Shells from Upper California, collected by Thomas Nuttall, Esq. *J. Acad. Nat. Sci. Philad.* **7**: 227-268.
- CRACHERODE, C. M. 1791. *Manuscript Catalogue of Shells*. 3 parts (in one vol.). London.
- CROUCH, E. A. 1827. *An Illustrated Introduction to Lamarck's Conchology . . . being a literal translation of the Recent and Fossil Genera etc., etc.* iv + 44 pp.; 22 col. pls. London. 4°.
- DALL, W. H. 1889. *A Preliminary Catalogue of Shell-bearing Marine Molluscs and Brachiopods of the S. E. Coast of the United States*. 221 pp.; 74 pls. Washington.
- 1898. Tertiary Fauna of Florida. *Trans. Wagner. Free. Inst. Sci.* **3**; (4) 571-947; 35 pls.
- 1901. Synopsis of the Lucinacea and the North American species. *Proc. U.S. N. M.* **23**: 779-833; 4 pls.
- 1905. Note on *Lucina (Miltha) Childreni* Gray, and on a new species from the Gulf of California. *Nautilus* **18**: 110-112.
- 1915. An Index to the Museum Boltenianum. *Smithsonian Inst. Publication* 2360.
- DAWSON, W. R. 1949. Some Eighteenth Century Conchologists. *J. Conch.* **23**: 44-47.
- DELL, R. K. 1955. *Native Shells*. 64 pp.; 143 text-figs. (*Native in New Zealand series*.) Wellington.
- DESHAYES, G. P. 1830-32. *Histoire Naturelle des Vers . . . Par M. Bruguière (. . . continuée par M. G. P. Deshayes)* Tom. II & III, *Encyclopédie Méthodique*. Paris. 4°.
- 1853. *Catalogue of the Conchifera of Bivalve Shells in the Collection of the British Museum*. Part I. *Veneridae etc.*, 216 pp. London.
- DIBDIN, T. F. 1817. *The Bibliographical Decameron*. 3 vols. illus. London.
- DILLWYN, L. W. 1817. *A Descriptive Catalogue of Recent Shells*. 2 vols. xii + 1092 pp. London.
- 1827. Remarks on *Cypraea* described by Mr. Gray. *Zool. J.* **3**; 315-317.
- DODGE, H. 1952. A Historical Review of the Mollusks of Linnaeus. Part I. The Classes Loricata and Pelecypoda. *Bull. Amer. Mus. Nat. Hist.* **100**: 1-264.
- DONOVAN, E. 1823-27. *The Naturalist's Repository, or Miscellany of exotic Natural History, etc., etc.* 5 vols.; 180 col. pls. with descriptive letterpress. (Reissued 1834.) London. 4°.
- DUBOIS, C. 1825. *An Epitome of Lamarck's Arrangement of Testacea; being a free translation of his work De l'Histoire Naturelle des Animaux sans Vertèbres . . .* Second Edition. xxx + 317 pp. London.
- 1828. —. Third Edition. 15 col. pls. London.
- EDWARDS, E. 1870. *Lives of the Founders of the British Museum*. x + 780 pp.; 13 text illus. London.
- ENCYCLOPAEDIA LONDINENSIS, or *Universal Dictionary of Arts, Sciences etc., etc., compiled, digested and arranged by John Wilkes*. Article Conchology, Vol. **5**: 14-41; 16 col. pls. & col frontispiece. 1810. London. 4°.
- FISCHER VON WALDHEIM, G. 1806-7. *Muséum Demidoff (mis en ordre systématique et décrit par G. Fischer) . . . catalogue . . . des curiosités de la Nature et de l'Art, données à l'Université impériale de Moscou par . . . P de Demidoff*. 3 Tom. (in 1) illus. Moscow. 4°.
- FLETCHER, L. 1904. See British Museum (Nat. Hist.).
- FULTON, H. C. 1915. A List of the Recent Species of *Spondylus* Linné, with some Notes and Descriptions of six New Forms. *J. Conch.* **14**: 331-362.
- 1937. Notes on the Recent *Spondylus* of Florida. *Nautilus*, **51**: 38-39.
- GATLIFF, J. H. 1902. Notes on Perry's Conchology. *Victorian Naturalist*, **19**: 75-76.
- GMELIN, J. F. 1790. *C. a Linné . . . Systema Naturae . . . Editio decima tertia . . . cura J. F. Gmelin, 1788-93*, **1** (6): 3021-3910. Lipsiae

- GOULD, A. A. 1833. *Lamarck's Genera of Shells. with a Catalogue of Species. Translated from the French.* vii + 110 pp.; 1 pl. Boston.
- 1850. Shells from the United States Exploring Expedition. *Proc. Boston Soc. Nat. Hist.* 3: 309-12.
- GRAY, E. W. 1799. *Manuscript Catalogue of Minerals bequeathed to the British Museum by the Rev. Clayton Mordaunt Cracherode A.M.* 96 pp. London. 4°.
- 1801. *Manuscript Catalogue of Shells bequeathed to the British Museum by the Rev. Clayton Mordaunt Cracherode A.M.* 98 pp. London. 4°.
- GRAY, J. E. 1821. A Natural Arrangement of the Mollusca. *London Med. Repos.* 15: 229-239.
- 1821-31. *The Zoological Miscellany*, pp. 1-86; 6 pts. (All published.) 4 pls. London. 4°.
- 1824. Conchological Observations, being an attempt to fix the study of Conchology on a firm basis. *Zool. J.* 1: 204-224.
- 1824-28. Monograph on the Cypraeidae, a Family of Testaceous Mollusca. *Ibid.* 1: 71-80, 137-152, 367-391 (1824), 489-518 (1825); 3: 363-371, 567-576 (1828); 4: 66-88, 213-216. Index (1828).
- 1824. On the structure of *Melania setosa*. *Ibid.* 1: 253-255.
- 1824. Reply to Mr. Swainson on *Neritina Corona* and *Melania setosa*. *Ibid.* 1: 523-526.
- 1825. A List and Description of some Species of Shells not taken Notice of by Lamarck. Pt. 1. *Ann. Phil.* 9: 135-140.
- 1837. A Synoptical Catalogue of the Species of certain Tribes or Genera of Shells . . . with Descriptions of the New Species. *Charlesworth's Mag. Nat. Hist.* (New Ser.) 1: 370-376.
- 1838. Catalogue of the species of the genus *Cytherea*, of Lamarck. *The Analyst*, 8: 302-309.
- 1847. A List of the Genera of Recent Mollusca, their Synonyma and Types. *Proc. Zool. Soc. London*, 1847: 129-219. (Reprinted in vol 4 of M. E. Gray's *Figures of Molluscos Animals*, 1859 with original pagination.)
- 1852. *Molluscorum Britanniae Synopsis etc.* (Edited from W. E. Leach's proofs and MSS. by J. E. Gray.) xvi + 376 pp.; 13 pls. London.
- 1853. A Revision of the Genera of some Families of Conchifera or Bivalve Shells. *Ann. Mag. Nat. Hist.* (Ser. 2), 11: 33-44.
- GREW, N. 1681. *Musaeum Regalis Societatis, or a Catalogue & Description of . . . Rarities belonging to the Royal Society etc.* 10 + 386 + 43; 31 pls. Engr. portrait. London. fol.
- GRONOVIVS, L. T. 1763-81. *Zoophylacium Gronovianum, exhibens Animalia, Quadrupeda, Amphibia, Pisces, Insecta, Vermes, Mollusca, Testacea et Zoophyta.* 3 pts. vi + 380 [18] vi pp.; 20 pls. Lugduni Batavorum. fol.
- GÜNTHER, A. 1912. See British Museum (Nat. Hist.).
- HANLEY, S. 1855. *Ipsa Linnaei Conchylia. The Shells of Linnaeus, determined from his manuscripts and collection.* . . . 556 pp.; 6 pls. London.
- 1856. *Index Testaceologicus, An Illustrated Catalogue of British and Foreign Shells . . . by W. Wood. Revised edition.* xx + 234 pp.; 38 + 8 col. pls. London.
- HEDLEY, C. 1902. Studies on Australian Mollusca. Part VI. *Proc. Linn. Soc. N. S. Wales*, 27 (1): 7-29; 2 pls.
- & PILSBRY, H. 1912. Strange names for old acquaintances. *Nautilus*, 26: 45-46.
- HERMANN, J. 1781. Erster Brief über einige Conchylien an den Herausgeber. *Der Naturforscher* 16: 56-56.
- HOPWOOD, A. T. 1946. Miscellaneous Notes. 1. Perry's Conchology. *Proc. Mal. Soc. London*, 26: 152.
- HORNELL, J. 1951. *Indian Molluscs.* iv + 96 pp.; 70 text-figs.; 1 col. pl. (Bombay Natural History Soc.) Bombay.
- [HUMPHREY, G.] 1786. *A Catalogue of the Portland Museum . . . Sold by Auction . . . 24th of April, 1786, and the thirty-seven following days etc.* viii + 194 + 6 pp. Engr. portrait & frontispiece. London. 4°.

- HUMPHREY, G. & CRACHERODE, C. M. 1788. *Manuscript Catalogue of Fossils*. 123 pp. London. 4°.
- HUMPHREY, G. 1794. Account of the Gizzard of . . . *Bulla lignaria*. *Trans. Linn. Soc. London*, **2** : 15-18.
- [HUMPHREY, G.] 1797. *Museum Calonnianum, specification of the Various articles which compose the . . . Museum of Natural History collected by M. de Calonne in France, etc.* Part I. viii + 84 pp. London.
- HYND, J. S. 1954. A Revision of the Australian Pearl-shells, Genus *Pinctada* (Lamelli-branchia). *Aust. J. Mar. & Freshwater Res.* **6** : 98-137; 13 pls.
- IREDALE, T. 1912. New Generic names and new species of Marine Mollusca. *Proc. Mal. Soc. London*, **10** : 217-228.
- 1927. Caloundra Shells. *Aust. Zool.* **4** : 331-336.
- 1937. The Truth about the Museum Calonnianum. *Festschrift für Prof. Dr. Embrik Strand*, **3** : 408-419. (Univ. Riga.)
- 1939. Great Barrier Reef Expedition 1928-29, Scientific Reports, **5**, No. 6. *Mollusca*, Part I 209-425; 7 pls.; 1 map. British Museum (Natural History). London. 4°.
- JACKSON, J. W. 1937. A letter from George Humphrey to William Swainson. 1815. *J. Conch.* **20** : 332-337.
- JAMESON, H. L. 1901. On the Identity and Distribution of the Mother-of-Pearl Oysters; and a Revision of the Subgenus *Margaritifera*. *Proc. Zool. Soc. London*, 1901, **1** : 372-394.
- JOHNSON, C. W. 1911. Note on *Spondylus echinatus* Martyn. *Nautilus*, **25** : 11.
- JOHNSTON, G. 1850. *An Introduction to Conchology*. xvi + 614 pp.; 102 text figs. London.
- JKES BROWN, A. J. 1913. On *Tivela* and *Grateloupia*. *Proc. Mal. Soc. London*, **10** : 266-273.
- 1914. Synopsis of the Veneridae. *Ibid.* **11** : 58-94.
- KEEP, J. 1935. *West Coast Shells*. Revised by Joshua Bailey, Jr. xi + 350 pp., 334 text-figs. California.
- KENNARD, A. S. & WOODWARD, B. B. 1922. On the genesis of the designation of "Types" among Malacological writers. *Proc. Mal. Soc. London*, **15** : 47-51.
- 1926. *Synonymy of the British non-Marine Mollusca*. xxiv + 447 pp. British Museum (Nat. Hist.).
- SALISBURY, A. E. & WOODWARD, B. B. 1931. The Types of Lamarck's Genera of Shells as selected by J. G. Children in 1823. *Smithsonian Miscel. Coll.* **82**, No. 17.
- LAMARCK, J. B. P. A. DE M. DE. 1799. *Prodrome d'une nouvelle classification des Coquilles*. *Mém. Soc. Hist. Nat. Paris*, 163-191.
- 1815-22. *Histoire Naturelle des Animaux Sans Vertèbres, présentant les caractères généraux et particuliers de ces Animaux, etc.*, 7 vols. Paris.
- 1835-45. — Ed. 2 . . . revue at augmentée . . . par . . . G. P. Deshayes. 11 vols. Paris.
- LAMY, E. 1938. Révision des *Spondylus* vivants du Museum National d'Histoire Naturelle de Paris. *J. Conchyl.* **82** : 177-214; 265-306.
- LEACH, W. E. 1814-17. *The Zoological Miscellany; being descriptions of new, or interesting animals . . . illustrated with coloured figures by R. P. Nodder*. 3 vols. London. 4°.
- LINNAEUS, C. 1758. *Systema Naturae . . . Editio Decima, reformata*. Tom. I. 824 pp. Holmiae.
- 1767. — *Editio duodecima reformata*. Tom. I. Part 2; 533-1327 [36]. Holmiae.
- LISTER, M. 1685-92(97). *Historia sive Synopsis methodicae Conchyliorum . . . liber . . . S. et A. Lister figuras pin. 6 pt.* [in 2 vols.]; 1057 pls. Londini. fol.
- MARTINI, F., & CHEMNITZ, J. 1769-95. *Neues Systematisches Conchylien Cabinet*. 11 vols. illust. Col. Nurnburg. 4°.
- MATHESON, C. 1954. Thomas Pennant and the Morris Brothers. *Ann. Sci.* **10** : 258-271.
- MATHEWS, G. M., & IREDALE, T. 1912. Perry's *Arcana*—An overlooked work. *Victorian Naturalist*, **29** : 7-16.
- MELVILL, J. C. 1888. On the genus *Cypraea*. *Mem. Proc. Manchester Lit. Phil. Soc. (Ser. 4)*, **1** : 184-252.

- MELVILL, J. C. 1900. Lovell Reeve: A brief sketch of life and career. *J. Conch.* **9**: 344-357.
 — 1916. Notes on the genus *Harpa*. *Ibid.* **15**: 25-40.
- MONTFORT, P. DE. 1808-10. *Conchyliologie Systematique et Classification Methodique des Coquilles*. 2 Tom. illus. Paris.
- NICKLÈS, M. 1950. Mollusques testacés Marins de la Côte occidentale d'Afrique. *Manuels Ouest-Africains*, **2**: vi + 269 pp. Paris.
- ODHNER, N. 1917. Results of Dr. G. Mjöberg's Swedish Scientific Expeditions to Australia. 1910-13. *K. Svensk. Vet. Akad. Handlingar*, **52**: 16; 115 pp.; 3 pls.; 51 text-figs.
- ORBIGNY, A. D' 1835-47. *Voyage dans l'Amérique Méridionale exécuté pendant 1826-33*. 7 vols. & atlas. Paris. 4°.
- PARRY, SIR W. E. 1821. *Journal of a Voyage for the Discovery of a North West Passage . . . performed in . . . 1819-20, in H.M.S. Hecla and Griper . . . with an Appendix*. xxxix + 310 + clxxix pp. 14 pls. 6 maps. London. 4°.
- 1824. *Supplement to the Appendix etc.* clxxxi-cccx pp. 6 pls. (Shells by J. E. Gray.) London. 4°.
- PERRY, G. 1810-11. *Arcana, or The Museum of Natural History; containing the most recent discovered objects . . . with . . . plates, and . . . descriptions*. 84 col. pls. with descriptive letterpress. London.
- 1811. *Conchology of the Natural History of Shells . . . illustrated by coloured engravings . . . including the latest discoveries*. 4 pp. intro. 61 col. pls., with descriptive letterpress.
- PERRY, L., & SCHWENGEL, J. 1955. *Marine Shells of the Western Coast of Florida*. Frontispiece; 318 pp., 54 pls.; 6 text-figs.
- PHILIPPI, R. A. 1848. *Centuria tertia Testaceorum novorum*. *Zeitsch. für Malak.* **5**: 151-176.
- PILSBRY, H. A. 1902. *Manual of Conchology (Ser. 2) Pulmonata*, **14**. Philadelphia.
- PRASHAD, B. 1932. *The Lamellibranchia of the Siboga Expedition. Systematic Part. II. Pelecypoda*. 353 pp.; 9 pls.; 1 map. Leiden. 4°.
- QUOY, J. R., & GAIMARD, J. 1830-35. *Voyage de . . . l'Astrolabe . . . pendant 1826-29, sous le commandement de M. J. Dumont d'Urville, etc., Zoologie*; 4 vols. & atlas. Paris. 8° & fol.
- RÈCLUZ, C. A. 1841. Description de quelques nouvelles espèces de Nérites vivantes. *Rev. Zool. (Soc. Cuv.)* **4**: 2 pts. 102; 273.
- REEVE, L. 1841. *Conchologia Systematica or Complete System of Conchology: in which the the Lepades and Conchiferous mollusca are described, etc.*, 2 vols. 300 col. pls. London. 4°.
- & SOWERBY, G. B. 1843-78. *Conchologia Iconica or Illustrations of the Shells of Molluscos Animals. (Continued by G. B. Sowerby.)* 20 vols. Illust. in Col. London. 4°.
- RÖDING, P. F. 1798. *Museum Boltzenianum . . . Pars Secunda Conchyliis, etc.*, viii + 199 pp. Hamburgi.
- 1906. *Reprint of 1798 edition, with introductory note by C. D. Sherborn and E. R. Sykes*. viii + 199 pp. London.
- ROGERS, J. E. 1908. *The Shell Book*. xvi + 503 pp., 95 pls. Boston. 4°.
- 1951. — *Second edition* [with list of modern names by Harald A. Rehder.]
- SAY, T. 1822. An Account of some of the Marine Shells of the Shells of the United States. *J. Acad. Nat. Sci. Philad.* **2**: 221-248; 257-325.
- 1858. *The Complete writings of Thomas Say on the Conchology of the United States*. Ed. by W. G. Binney. vi + 252 pp., 75 col. pls.
- SCHUBERT, G. H., & WAGNER, J. A. 1829. *Neues Systematisches Conchylien Cabinet, angefangen von Martini und Chemnitz*. Bd. **12**. Nürnberg. 4°.
- SCHUMACHER, C. F. 1817. *Essai d'un Nouveau Système des Habitations des Vers Testacés*. 2 + 287 pp. 22 pls. Copenhagen 4°.
- SHARPE, R. B. 1906. See British Museum (Nat. Hist.).
- SHERBORN, C. D. 1902. *Index Animalium sive index nominum quae ab A.D. 1758 generibus et speciebus animalium imposita sunt . . . Sectio prima . . . usque ad finem . . . 1800*. lix + 1195 pp. Cantabrigiae.

- SMITH, E. 1911. *The Life of Sir Joseph Banks. President of the Royal Society, etc.* xvi + 348 pp., Frontispiece; 16 pls. London.
- SMITH, E. A. 1906. See British Museum (Nat. Hist.).
- 1914. On Australian Mactridae. *Proc. Mal. Soc. London*, **11**: 137-151.
- SMITH, M. 1942. *A Review of the Volutidae*. 127 pp. Frontispiece; 26 pls. Florida. 4°.
- 1951. *East Coast Marine Shells*. 4th edition revised. vii + 314 pp.; 77 pls. Florida. 4°.
- SOLEM, A. 1954. Living species of the Pelecypod Family Trapeziidae. *Proc. Mal. Soc. London*, **31**: 64-84.
- SOWERBY, G. B. 1825. *A Catalogue of the Shells . . . of the late Earl of Tankerville . . . with an appendix*. vii + 92 + xxxiv pp.; 7 col pls. London.
- 1828. Notes on Mr. Gray's Additions and Corrections to a Monograph on Cypraea, in a letter addressed to W. J. Broderip, Esq. *Zool. J.* **4**: 217-221.
- SOWERBY, J. *The Genera of Recent and Fossil Shells for the use of students in Conchology and Geology. Commenced by J. Sowerby . . . and continued by G. B. Sowerby (1st) . . . with . . . plates by J. Sowerby and J. D. C. Sowerby*. 2 vols. 267 col. pls. with descriptive letterpress. London.
- STEINBECK, J., & RICKETTS, E. 1941. *Sea of Cortez; a leisurely Journal of travel and research*. x + 598 pp.; 40 pls. New York. (*Annottated Phyletic Catalogue and Bibliography*, pp. 283-586.)
- SWAINSON, W. 1820-23. *Zoological Illustrations of Original figures and descriptions of New, Rare or Interesting Animals, etc.*, Ser. 1. 3 vols. col. pls. Descriptive letterpress. London.
- 1829-33. *Ibid.* Ser. 2. 3 vols. col. pls. Descriptive letterpress. London.
- 1822. *A Catalogue of the Rare and Valuable Shells, which formed the celebrated collection of the late Mrs. Bligh. With an appendix*. iv + 22 pp.; 2 col. pls. London.
- 1823. The Specific Characters of several undescribed Shells. *Phil. Mag. & Journ.* **62**: 401-403.
- 1824. Description of Two New and Remarkable Fresh Water Shells: *Melania setosa* and *Unio gigas*. *Q. Journ. Sci. (R. Inst. Gt. Brit.)* **17** (33): 13-17.
- 1824. Observations on *Melania Setosa* in reply to Mr. Gray. *Zool. J.* **1**: 399-403.
- 1840. *Taxidermy; with the biography of Zoologists, etc.*, (*Lardner's Cabinet Cyclopaedia*, vol. 126); 392 pp.; text fig. Engr. Title. London.
- THIELE, J. 1931-35. *Handbuch der Systematischen Weichtierkunde*. 2 Bde. vi + 778; v + 779-1154 pp. Illust. Jena.
- TOMLIN, J. R. LE B. 1927. The Mollusca of the "St. George" Expedition (1). *J. Conch.* **18**: 154-170.
- VIADER, R. 1937. Revised Catalogue of the Testaceous Mollusca of Mauritius and its Dependencies. *Maurit. Inst. Bull.* **1**, pt. 2. Mauritius.
- WILKINS, G. L. 1951. *Strombus thersites* Swainson: Designation of a Lectotype. *Proc. Mal. Soc. London*, **28**: 238-239; 1 pl.
- 1953a. A Catalogue and Historical Account of the Sloane Shell Collection. *Bull. Brit. Mus. (Nat. Hist.) Historical Series*, **1**, No. 1: 1-47; 12 pls.
- 1953b. Notes on some recently recognized types in the British Museum (Natural History). Designation of two Lectotypes. *J. Conch.* **23**: 290-294.
- 1954. Captain Cook's Imperial Sun Trochus. *Ibid.* **24**: 7-12.
- 1955. A Catalogue and Historical Account of the Banks Shell Collection. *Bull. Brit. Mus. (Nat. Hist.) Historical Series*, **1**, No. 3: 71-119; 6 pls.
- WINCKWORTH, R. 1929. Marine Mollusca from South India and Ceylon. III: *Pinna*. With an index to the recent species of *Pinna*. *Proc. Mal. Soc. London*, **18**: 276-297.
- 1945. The types of the Boltenian genera. *Ibid.* **26**: 136-148.
- WOOD, W. 1815. *General Conchology; or, a description of shells arranged according to the Linnean system*. iv + 246 pp. 60 col pls. (Reissued 1835 with new title page.) London. 4°.

- WOOD, W. 1818. *Index Testaceologicus, or a Catalogue of Shells British and Foreign* . . . viii + 188 pp.; 8 col pls. London.
- 1825. *Ibid.* 2nd Edition; viii + 188 pp. 38 col. pls. London.
- 1828. *Ibid.* . . . Supplement. iv + 59 pp.; 8 col. pls. (480 figs.). London.
- WYATT, T. 1838. *A Manual of Conchology, according to the system laid down by Lamarck, with the late improvements by de Blainville.* ix + 191 pp.; 36 col. pls. New York.
- YEN, T. 1942. A Review of Chinese Gastropods in the British Museum. *Proc. Mal. Soc. London*, 24: 170-289; pls. 11-28.

9. ACKNOWLEDGMENTS

Thanks are due to Dr. C. A. Wright and Mr. I. C. J. Galbraith for carefully reading the manuscript; to Mr. T. J. Brown of the Department of Manuscripts, British Museum, Bloomsbury for his kind co-operation in producing original documents in confirmation of the various handwritings, and particularly for drawing the author's attention to C. M. Cracherode's notebook while a Trustee of the Museum. Mr. J. V. Brown of the Photographic Staff of the British Museum (Natural History) has again devoted much care to the preparation of the photographs appearing on the accompanying plates.

EXPLANATION OF THE PLATES

(With the exception of those on plate 25 the figures are all natural size.)

PLATE 20

FIG. 1. Title page of the Catalogue of the Cracherode Shell collection written by Dr. E. W. Gray in 1801.

Catalogue
of Shells
bequeathed to the
British Museum
by the Rev.
Clayton Mordaunt Cracherode,
A. M.

Zool. Dept.
MOLLUSCA

This Catalogue is copied from one made
by Mr. George Humphrey, Dealer in Shells,
&c. who supplied Mr. Cracherode with
the Shells, at the Prices marked in the
Catalogue.

The necessary Corrections, referring to
Gmelin's Edition of Linnaeus's Systema
Naturae, are added on the left hand pages.



PLATE 21

FIG. 2. Upper portion of page 94 of the Humphrey-Cracherode mineral catalogue ; item one written by George Humphrey, items two and three added by C. M. Cracherode.

FIG. 3. Cracherode specimens exhibiting E. W. Gray's catalogue numbers and names written on the shells.

- a. Spondylus americanus* Hermann, Crach. No. 197.
- b. Trapezium sowerbyi* Hidalgo, Crach. No. 35.
- c. Chlamys tranquebaricus* (Gmelin), Crach. No. 122.

(Note pink disc attached to figs. a and c.)

94

16. Metals.

7. Gold.

○.

1. An exceeding beautiful and rich Specimen of foliaceous Native Gold in Quartz, from Hungary, very rare.
2. A fine specimen of rich native Gold in quartz, from Sumatra. From the cabinet of Dr Glen King. 1788. R. R.
3. Foliated native gold in a Quarzose Matrix containing Marcasite, Gold, mica, &c from the gold mine' in Transylvania. R.

FIG. 2.

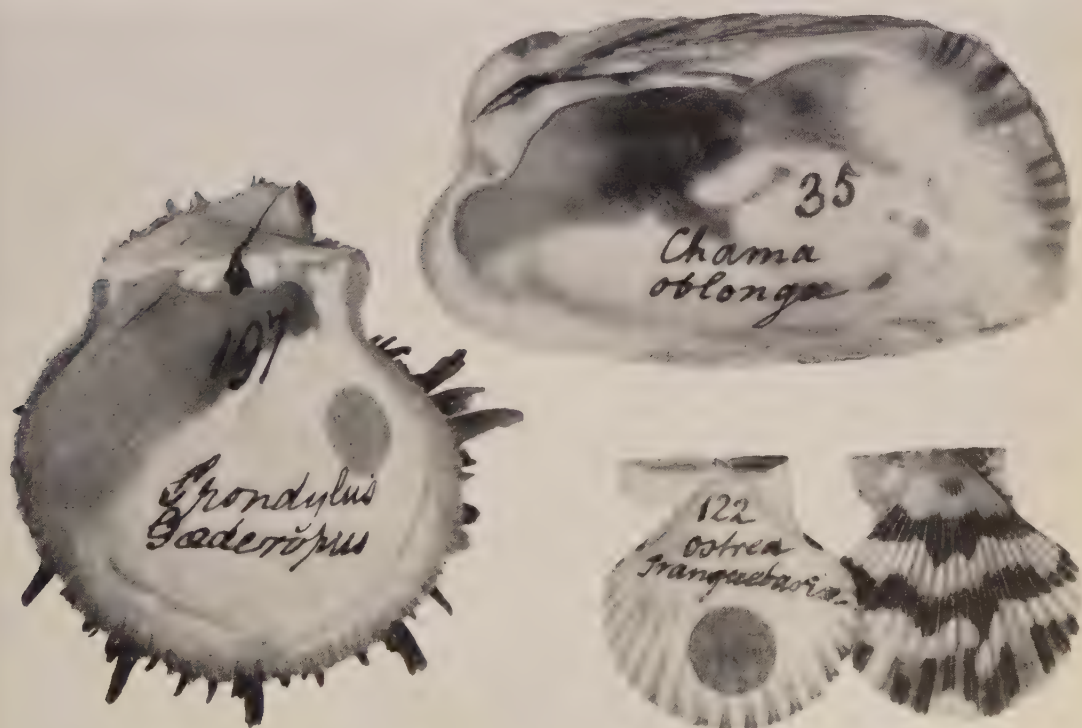


FIG. 3.

PLATE 22

FIG. 4. A page from the small octavo catalogue (dated 1791) written entirely by Cracherode.

FIG. 5. Page 25 of the E. W. Gray Catalogue showing items copied exactly, with numbers added.

(Turbo.)

Elenchus Iris. The Iris Pearl drop shell,
from New Zealand. one of them uncoated. 0.3.0.

Elenchus variegatus. Variegated Ear drop
shell, from Van Diemen's land. 3. specimens. 0.10.0

Elenchus Opalus. Opal Pearl drop. Five varieties,
two uncoated 0.3.0

FIG. 4.

25

Elenchus.

228 Elenchus Iris (Turbo, Linn.) The Iris pearl
drop shell. From New Zealand. 2 specimens,
one uncoated. ————— 0,3,0+

229 Elenchus variegatus. The variegated Ear drop
shell. From Van Diemen's land. 3 specimens. 0,10,0+

230 Elenchus Opalus. The opal pearl drop shell.
5 specimens, two of them uncoated. ————— 0,3,0

FIG. 5.

PLATE 23

FIG. 6. Lectotype of *Lucina Chiedrenae* Gray, Crach. No. 216.

FIG. 7. Holotype of *Crenatula folium* Gray, attached to original tablet. Crach. No. 93, ex Calonne No. 821.

FIG. 8. *Scaphander lignarius* (Linné), with original gizzard plates, as sold by Humphrey to Cracherode. Crach. No. 77.

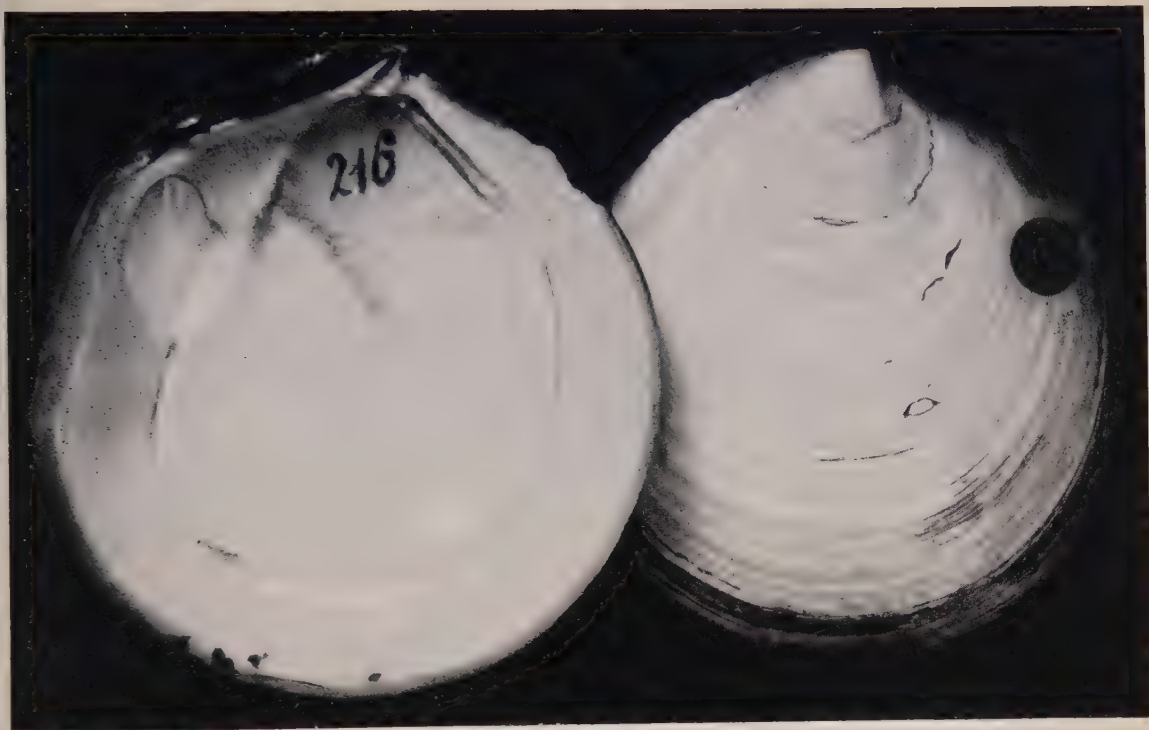


FIG. 6.



FIG. 7.



FIG. 8.

PLATE 24

FIG. 9. *Labiosa lineata* (Say), Holotype of *Mactra cyprinus* Wood, attached to original tablet with E. A. Smith's label. Crach. No. 59, ex Calonne No. 838.

FIG. 10. *Anostoma octodentatum* F. de Waldheim. Crach. No. 269.

FIG. 11. Holotype of *Clithon coronata* Leach. Crach. No. 354.

FIG. 12. *Labiosa lineata* (Say), Holotype of *Mactra recurva* Wood, on original tablet with E. A. Smith's label, and J. R. le B. Tomlin's type label in top left-hand corner. Crach. No. 60.

FIG. 13. Holotype of *Pinctada radiata* (Leach). Slight damage to shell replaced by dotted line. Crach. No. 82.

FIG. 14. *Circe cracherodii* Gray. Holotype. Crach. No. 169.

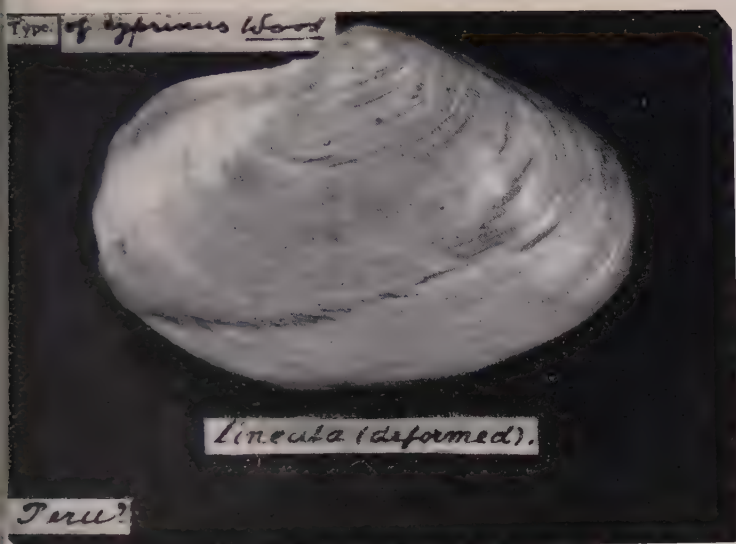


FIG. 9.



FIG. 10.



FIG. 11.

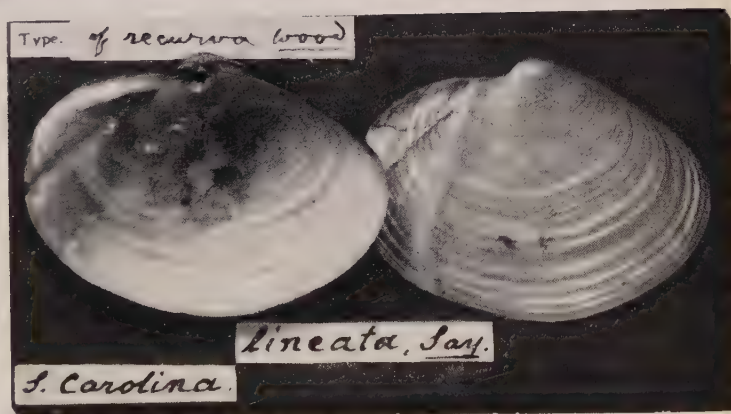


FIG. 12.

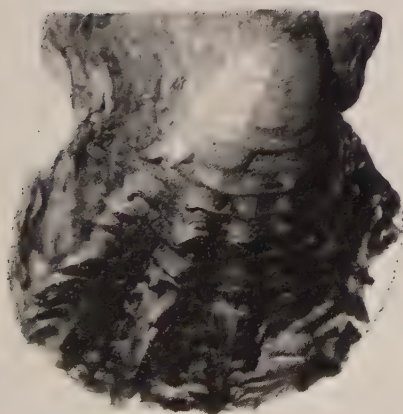


FIG. 13.

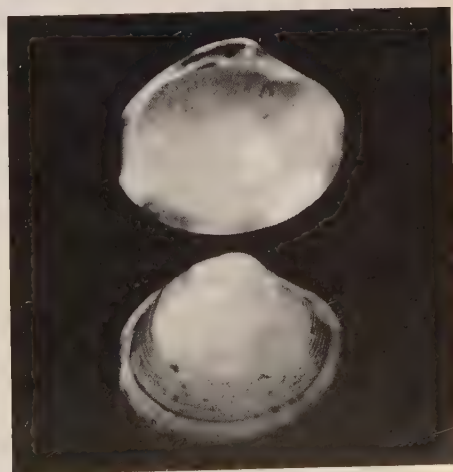


FIG. 14.

PLATE 25

This plate shows a selected series of Cracherode specimens still mounted on the early Museum tablets, marked Mus. Cracherode, and still bearing J. G. Children's original paper labels. The original tablets have not been cut in any way, thus giving an idea of the appearance of the early exhibited collections.

FIG. 15a. *Thais columellaris* Lamarck. Crach. No. 58.

b. *Echinochama arcinella* (Linné). Crach. No. 39, ex Calonne 1020a.

c. *Murex acanthopterus* Lamarck. Crach. No. 321, ex Calonne 742.

d. *Murex permaestus* Hedley (*capucinus* Auct.). Crach. No. 314.

e. *Acavus haemastomus* (Linné). Crach. No. 258, said by Humphrey to have come from the famous collection of Pierre Lyonet (1707-89) of Gravenhage, Holland, a Dutch Lawyer whose shells were sold in 1796.

f. *Cypraea ventriculus* Lamarck, Crach. No. 216, labelled *C. achatina* Solander by Children, ex Humphrey in Cracherode MSS. catalogue.

g. *Cypraea camelopardalis* Perry, Crach. No. 214, labelled *Cypraea melanostoma* Leathes by Children.

h. *Murex scorpio* Linné. Crach. No. 317.

j. *Scutus antipodes* Montfort. (*Parmaphorus australis* Lamarck). Crach. No. 365.

(All the above figures have been reduced by approximately one-fifth.)

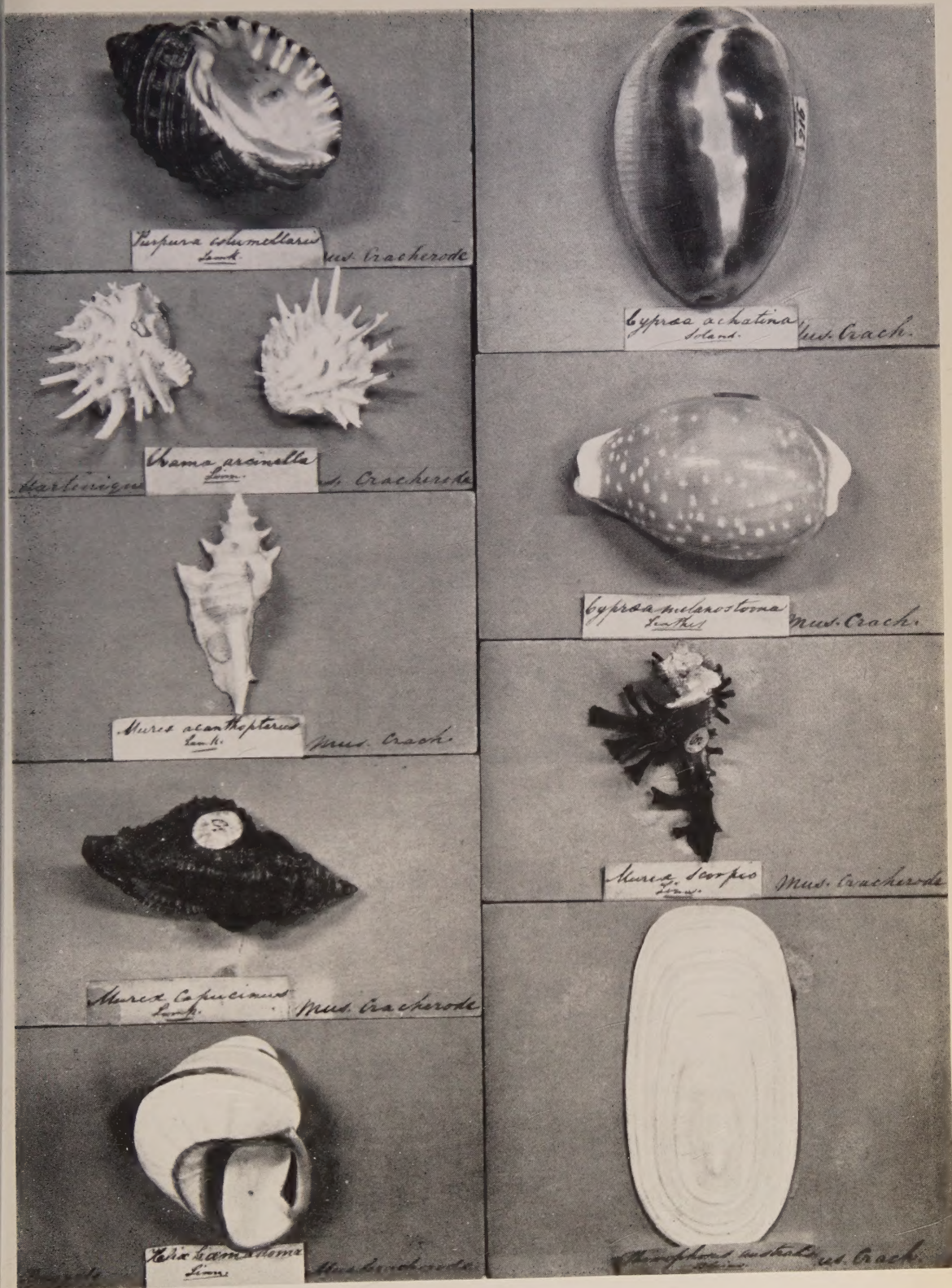


FIG. 15.

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